ERRATA.

On page 68, instead of "The exports for the past eight years" (and the table following), read—

The exports for the past five years are as follows:

1904	459,260 lbs.
1903	452,901 lbs.
1902	433,619 lbs.
1901	327,939 lbs.
1900	252,371 lbs.

REPORT

ON

AGRICULTURE

FOR THE

PROVINCE OF NEW BRUNSWICK

FOR THE YEAR

1904

PUBLISHED BY ORDER OF THE LEGISLATURE.

FREDERICTON, N. B.
1905.

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DEPARTMENT OF AGRICULTURE.

Fredericton, N. B., December, 1904.

To His Honor the Honorable Jabez Bunting Snowball, D. C. L., LL.D., Lieutenant-Governor of the Province of New Brunswick.

May It Please Your Honor:—

I have the honor to submit the Report of the Department for Agriculture in New Brunswick for the year 1904.

I have the honor to be, Sir,

Your obedient servant,

L. P. Farris,
Commissioner for Agriculture.

DEPARTMENT OF AGRICULTURE, NEW BRUNSWICK.

Hon. L. P. Farris, Commissioner for Agriculture.

Thomas A. Peters, Deputy Commissioner.

Harvey Mitchell,	Dairy Superintendents.
J. F. Tilley,	
L. C. Daigle,	

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REPORT

OF THE

COMMISSIONER FOR AGRICULTURE,

NEW BRUNSWICK,

1904.

To The Honorable Jabez Bunting Snowball, D.C.L., LL.D., Lieutenant-Governor, etc.

May it Please Your Honor:—

I beg to submit my report as Commissioner for Agriculture for the year 1904, which has been one of the most unprofitable for agriculturists for many years. A long, cold winter, a very wet, cold spring, and an extremely dry summer, coupled with low prices for dairy produce, is responsible for this changed condition of affairs; and the only thing we have to content ourselves with is the fact that during the past few years both crops and prices have been most satisfactory. Therefore, if the farmers would strike an average, they would find in the end a satisfactory showing.

We find, on having perused reports, etc., from other Provinces of the Dominion, that in some instances the same condition of affairs prevailed as were prevelent here, and it seems to be pretty universal that crops were lighter, and prices, especially of dairy produce, lower than they have been for some years.

We find, upon examination of trade returns for the year 1904, that the shortage reported in wheat alone exported from Canada amounted to over $11,000,000, and an Ontario report on the crops of that Province shows a yield for 1904 of 15.1 bushels per acre, and a total of 9,160,623 bushels, as against a yield of 25.9 bushels per acre, and 17,242,763 bushels for 1903. This report is for fall wheat, while the report for spring wheat shows a decrease in yield per acre over 1903 of 3.3 bushels, and a total decrease in production of about 1,200,000 bushels.

My object in pointing out these facts is simply to show the New Brunswick farmers that they are not the most unfortunate of Canadian people, and should put their shoulders to the wheel with that determination which means success.

This department is spending thousands of dollars each year with a view of encouraging and bettering the condition of the farmers of this country, and we are satisfied that we have been well repaid for the money spent, from the fact that on every hand the work done is plainly in evidence, and the improvement in agricultural knowledge has been very marked, so much so that strangers from other countries have and are commenting upon the prosperous condition of our farmers. Barns that a few years ago were in a dilapidated condition, are today in a good state of repair, while on every hand there seems to be evidence of improvement. We are satisfied that the farmers are studying their business, and the cast-iron rules as practiced by our forefathers, who had the virgin soil to work with, are giving way to improved methods, varied to suit our changed conditions. Our dairying industry, as a result of the improved knowledge, has grown to be a valuable asset, and while we are sorry to report a shortage this year, we can content ourselves with the fact that since the institution of a dairy department in connection with the Department of Agriculture, this is the first shortage ever reported, which does not at all go to prove that the shortage was caused through lack of interest, but through most unfavorable conditions for manufacturing milk, viz., a cold wet spring, which resulted in poor pastures; and a very dry summer, which will be noticed from a careful study of the following report of the weather, as compiled by Chancellor Harrison, of the University of New Brunswick.

WEATHER REPORT.

The following table shows the hours of bright sunshine at Fredericton during the year 1904, also the hours of possible sunshine, and the average for the last 23 years:—

1904. MONTHS.	Hours of bright sunshine at Fredericton.	Hours of possible sunshine.	Average hours of sunshine for the last 23 years at Fredericton.
January	77	285.0	111
February	107	302.2	123
March	149	369.9	149
April	154	406.5	184
May	209	463.2	200
June	230	470.4	218
July	224	475.4	235
August	246	437.2	221
September	190	376.4	184
October	144	340.1	147
November	85	284.9	92
December	137	271.1	93

The following table shows the highest and lowest temperatures at Frêdericton for the year 1904, together with the average temperature for the last 30 years, the precipitation for each month, in inches, of rain and melted snow, and the average precipitation for the last 31 years. Ten inches of snow, measured just after falling, was taken as equivalent to one inch of rain. (The sign — before a number means that the temperature is below zero).

1904. MONTHS.	Highest and Lowest Temperature each month of the year 1904 at Fredericton.		Mean Temperature each month of the year 1904 at Fredericton.	Average Mean Temperature for the last 31 years at Fredericton.	Precipitation for each month of 1904 at Fredericton in inches.	Average precipitation for 31 years at Fredericton.
	Highest	Lowest				
January	42	—28	8	12	3.4	4.0
February	50	—35	11	16	3.6	3.6
March	52	—10	27	27	4.8	4.0
April	65	7	39	38	3.9	2.5
May	81	30	55	51	4.2	3.7
June	84	35	59	61	2.0	3.5
July	86	45	68	66	1.5	3.6
August	86	39	62	64	3.9	3.6
September	78	26	52	56	7.7	3.4
October	68	20	44	44	2.8	3.9
November	50	— 1	29	32	2.5	4.1
December	39	—21	13	19	1.8	3.4

It will be noticed from the above table that during the month of May there fell 4.2 inches of rain, being 1-2 inch more than the average for the last 31 years, while the temperature at no time exceeded 81 degrees, and was down to 30 degrees, being 2 degrees below the freezing point.

It is during the month of May that farm crops are put into the ground, but, owing to the wet, cold weather, a much smaller acreage was put to seed. Then came the months of June and July, with 4 inches of rain, less than the average fall. This, coupled with a low temperature, as has already been pointed out, prevented rapid germination, and caused slow growth, but had more favorable conditions prevailed during September and October, the yield of crops would have been much different, for in many instances early frosts proved very destructive by destroying the crops on thousands of acres.

It will also be noticed from the preceeding table that during September there was a rainfall of 7.7 inches, being 4.3 inches more than the average, which greatly interfered with the harvest.

The following table is compiled from temperatures recorded at Chatham, St. John, Moncton, and Sussex:—

MONTHS.	Chatham.		Grand Manan.		Saint John.		St. Stephen.		Moncton.		Sussex.	
	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest
	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees	Degrees
1903 December	47	—13			52	— 5			48	— 9	49	—12
1904 January	37	—29	44	—10	42	—15	40	—32	42	—29	44	—29
February	43	—39	46	— 8	44	—14	43	—34	46	—33	44	—37
March	48	—13	60	— 3	46	— 1	48	— 9	51	— 7	46	— 6
April	67	4			63	17	65	13			63	14
May	81	26	72	35	73	33	82	25	82	27	78	24
June	85	34	76	43	79	41	84	33	84	31	79	32
July	91	44	83	50	81	50	87	45	84	43	83	42
August	87	40	76	48	76	46	90	34	85	36	81	36
September	83	29			68	34			79	26	75	24
October	72	22			65	24	66	28			69	22
November	83	29			68	34			79	26	75	24

INSTITUTE SYSTEM.

The great value of agricultural meetings to the farmers of the Province is now acknowledged, and from one end of the Province to the other, this department is receiving invitations for speakers.

It was the intention, when the Institute system was inaugurated, to give two series each year during the summer and winter months, but it has been found that it was difficult to get large attendances during the summer season, owing to the rush of work, and for the past two seasons a two days' session was given each Institute organization during the fall months, which has proved very much more satisfactory than the previous arrangement to give a one day session during different periods of the year.

The speakers have been selected from the best and most up-to-date farmers of this Province, as well as from the Provinces of Ontario and Quebec, men who have been trained along various lines of work, and who are recognized all over the Dominion as experts in their various lines. They have given general satisfaction, and, as a rule, when any fault is found with speakers, it is by those who have not attended, and who know absolutely nothing of the speaker's capabilities.

It has been said, and was at one time generally thought, that the Institute speakers sent out by the various Departments of Agriculture throughout the Dominion were men who had no practical knowledge of agriculture, and were, consequently, branded as "book agriculturists." But, today, all those who have had the pleasure of listening to the speakers sent out by this department have concluded that they are men well calculated to impart to their audiences agricultural knowledge. In this connection I might say that the Dominion Department of Agriculture has given us very valuable assistance, by allowing some of their best speakers to assist us with the work, and, at the same time, training our own local men, so that in the near future we will be self-reliant, and will be able to carry on the Institute work without any outside assistance.

The number of meetings held this year was about the same as was held last year, viz., 130; and, as before intimated, were distributed over the Province generally. Unfortunately, the Dominion election campaign interfered to some extent with the last series, but with only a few exceptions, all the meetings proved very satisfactory.

The list of speakers, and their addresses, are as follows: — L. C. Daigle, Moncton, N B.; C. F. Alward, Havelock, N. B.; Fred E. Sharp, Midland, N. B.; N. S. Dow, Woodstock, N. B.; W. S. Fraser, Bradford, Ont.; W. F. Steven, Trout River, P. Q.; Andrew Elliott, Galt, Ont.; F. W. Broderick, Ottawa; Major Jas. Sheppard, Queenston, Ont.

It has become quite apparent that each year our farmers are demanding more information, which, no doubt, has been brought about by the increased knowledge gained through the institute work, and through the reading of agricultural journals. It is a well-known fact that the more a man knows regarding his business, the more there seems for him to learn, and we believe this is especially true of agriculture, which, to our mind, requires more knowledge than perhaps any other line of work, because of the varied conditions under which the farmer has to work. With the Institute system this information and knowledge is brought to practically every man's door.

We wish to strongly urge the farmers generally to read more agricultural papers, which contain much information, and can be had each week at small cost.

DAIRY WORK.

As year after year passes by, the importance of the dairy, in connection with the farm work, forces itself upon us, and we are convinced that this country cannot let go the hold it has upon this industry without serious results following. Of course, if we, today, would make comparisons as to the value of this crop, or that, with the dairy, we no doubt would find the dairy behind some crops as far as dollars and cents go, but we must not estimate this industry by the net returns in dollars from the sale of the finished product. We must figure on the value of the bye-products when fed to pigs, calves, etc., and also the value of the fertilizers made through this medium. Yet, if comparisons should be made between the value of dairy products of the Dominion with that of any other farm crop, we would find that the former had the best of the argument by seventeen and a half millions of dollars, not taking into account the enhanced value of the farm, or the impetus given the pork making industry, etc.

To give an idea of the total value of exports of cheese and butter from Canada for the season of 1904, let me refer you to the following figures. In 1904 there was exported from Canada over thirty-one million dollars worth of cheese and butter, and during the same period there was exported about thirteen and a half million dollars worth of wheat, leaving a balance in favor of the dairy of over seventeen million dollars. In view of this fact, it seems only reasonable to suppose that Canadian dairymen place considerable value upon this industry, and while this Province has made considerable progress in the development of the dairy industry, our people have not entered into it in the spirit it deserves. Of course, we are well aware of the difficulty experienced in obtaining farm help who will care for milch cows, but the difficulty can and will be overcome here, as it has been in other Provinces of the Dominion. We believe that this Province is capable of producing very large quantities of cheese and butter, and of a quality that will bring the highest prices.

The shortage this season is to be regretted, but, as before mentioned, low prices and a poor season for the supply of milk were the cause, and we trust that another season will result in more favorable conditions, for cheese and butter is an article of food, and must be produced from the farm. The prices prevailing during the last few years for cheese and butter have been abnormally high, while the seasons have been favorable for milk production, consequently, if the past season is averaged with the present, a fair price would be shown.

PORK PRODUCTION.

The production of pork in the Province is increasing every year, much to the satisfaction of our pork packing establishments, and the quality made is of the kind that is desired by the consumers. We firmly believe that the change in this respect has been brought about through the lectures delivered by our Institute speakers, and the lessons learned while attending our Fat Stock Shows, where farmers can see animals judged alive, then slaughtered and again judged, and the defects pointed out, with the result that any farmer who is seeking to increase his knowledge can do so in such a way that he will never forget it. The pork packing establishments, which have been erected during the last few years, are doing a fair volume of business, and, no doubt, the managers of these different companies have done a great deal toward getting the farmers working, with a certain type of hog fairly fixed in their minds. In this connection I might say that type is practically the foundation of successful and profitable pork raising, and if the type is of the bacon class, the producer need have no fear of markets. It is noticeable in this Province, that, generally speaking, most of the farmers market their pork all at one time, or at least within a certain month during the fall, and from careful study of the conditions, we have become convinced that pork should be grown and marketed during each month of the year, when better prices would be received. The way the matter now stands, the great bulk of the pork produced is sold or put upon the market at one time, and, as a result, lower prices prevail, from the fact that the pork packing establishments cannot handle all that goes to them without being put to considerable extra expense, and as they work on small margins of profit, they have to make the price to meet the conditions. The prices paid for dressed pork have been very satisfactory during the year, made that way, possibly, by the large quantity of live hogs that were shipped from this Province to the Montreal markets, thereby cutting short the supply suitable for our local packers. It has been noticed, however, that during the summer months, while live hogs have been shipped to Montreal, packers here have frequently purchased car lots from Toronto. Just why this is done is not known to the writer, unless it is the difficulty they have experienced in gathering the lots together; while with those who have been shipping to Montreal, they have been gathering sheep and cattle at the same time they were gathering hogs, which, of course, would lessen the expense.

It is fast becoming apparent that with all farm crops and animals, they must be ready for the market when the market demands them, if highest prices are to be realized, and unless this system is adopted, we will be compelled to content ourselves with whatever is offered.

BEEF PRODUCTION.

We cannot say that there has been much improvement in beef production since our last report, due probably to the poor condition of the beef made and put upon the market, which is true in practically every county of the Province, except Westmorland, where considerable attention is and has been paid to this line of work by farmers who have not been trying to convince the consumers that first-class beef can be made by simply turning an animal out to pasture without having paid some attention as to breed, care, and food. No man can take an animal that has been starved from calfhood and turn it into a profitable beef animal, especially if its ancestors have been a mixture of all bloods. The most profitable beef can only be made from animals which have been bred for the purpose as well as having been fed for the purpose. In nearly all lines of work the operator starts out with a fixed object in view if he expects to be successful, and unless he follows every detail in connection with the work, his efforts are attended with failure, or, at any rate, less profits. This must be true of the beef producer, for the time will never come when the consuming public will be convinced that they can get as much nourishment out of poor beef as they can fat, at least so long as good beef can be had. That this is true, one need only pay a visit to the city market in St. John, where he will see carcass after carcass of beef that has been imported at a high price from the Province of Ontario, because what is offering in this Province does not suit those who consume it, and the earlier our farmers wake up to the necessity of devoting proper attention to the selection, care, and feeding of beef animals, the more money will be made, and the better off will be our country. There should be no necessity for importing beef into this Province, neither is there any good reason why stockers should be sent to the Northwest, or any other country, in an unfinished condition, there to be finished and returned here to be eaten, at an advance in price of ten or twelve cents per pound. It simply means when this is done, that the Provincial farmers are acknowledging the fact that they do not know how to feed or care for beef animals, and are content to sell at starvation prices for the sake of getting rid of their unfinished work. We would strongly urge that a closer and more careful study be made of this most important branch of farm work, with determination and energy mixed with it, to make New Brunswick supply at least her own people with a first-class article of beef. No man should say that it cannot be made to pay, if his experience has been along the lines above reported, for we have the assurance from leading farmers that beef raising, when properly done, does pay, but probably not to the same extent that it does in the Western States and Western Canada, where grazing is much better than it is here.

You cannot find in any profitable beef section, where farmers are trying to make beef from anything but animals possessing the beef type, neither will you find profitable dairying where there are any other than dairy breeds. A combination of the two will not work successfully, and we hope to see the time come when the farmers of this Province will be supplying our own people with the very best quality of the home-grown stock.

POULTRY PRODUCTION.

In the references already made to the production of the farm, it has been said, in speaking generally of them, that crops were light and prices low; but this can hardly be said of the production of poultry and the prices received. Stimulated by the high prices that have been paid for the poultry during the last two or three years, the farmers have each year increased their output, and have been amply repaid for the food consumed, as well as the labor entailed in prosecuting the work. That there is money to be made in the production of poultry, with prices ranging from twelve to fifteen cents per pound for chickens, and eighteen to twenty-five cents per pound for turkeys, and from $1.25 to $1.75 each for geese, cannot be gainsaid, especially since the market seems to be practically unlimited. The fact that the Dominion Department have for some years been endeavoring to stimulate and develop this interest by and through the establishment of fattening stations, and the poultry so fattened sent properly dressed and packed to the British markets, so far the experiment has proved very successful, and has materially assisted in the encouragement of the industry.

In this connection we might add that this department has devoted considerable attention to the work through the Farmers' Institute system, by sending out speakers who have made a special study, and have had special training along these lines, and who at every meeting have tried to induce the ladies on the farm to take up the work on their own account, they believing that the industry will receive better attention and be made more profitable.

We learn that considerable poultry from this country finds its way across the border, where even better prices are paid than have been paid here; therefore, the question of markets need not be considered seriously for some time to come, especially since trade has been opened up with the British Isles and in South Africa.

EGG PRODUCTION.

The egg trade in the Province seems to be in a very profitable condition, as far as prices are concerned, but there seems to be a great scarcity of stock, especially during the winter season. At no time this year have prices been lower than twelve cents per dozen, and this only a short time in the summer. During the fall prices gradually crept up to twenty cents, and at the present time they are bringing thirty cents per dozen, which should be very gratifying to those whose hens are trying to earn their living.

It seems rather strange to us that so little attention should be given this branch of farm work, when prices are so favorable. It is within the memory of the writer, when so many eggs were put upon the market that it was a very difficult matter to get them consumed, even at prices varying from eight to fifteen cents per dozen, while today the market seems to be unlimited, but buyers find it practically impossible to secure enough to fill the demand, even though prices have advanced about one hundred per cent.

It is a well-known fact that practically every farmer's hens are laying eggs when they are the cheapest, but not one in fifty have hens that supply their families with eggs during the winter season, or when the stock is worth a hundred per cent more than it is worth during the summer. Generally speaking, this fault is not due to the hens themselves, but to surrounding circumstances, such as cold houses and improper food supplied. Hens, in order to be made profitable, must be kept warm, in a house well lighted, and be supplied with a warm mash in the morning, whole grain for the other meals, as well as plenty of vegetables, such as cabbage, etc., ground oyster shells, and occasionally some meat. They should also be made to scratch for the grain given, otherwise they will become too fat, and will refuse duty. Hens, to be fattened, should be kept in a separate place from those that are expected to produce eggs. We would like to see more and better attention given to this line of work, as it is one of the profitable branches if properly attended to.

To give the readers of this report some idea regarding the volume of business done in eggs with the British markets, we publish the following, which gives the names of the places at which shipments were made, together with the number of cases which contained fifty dozen each:—

	1904 Cases	1903 Cases	1902 Cases	1901 Cases	1900 Cases
Glasgow, ...	30,382	39,165	53,533	75,484	75,628
Liverpool, ...	27,521	58,292	51,252	90,124	102,035
London, ...	10,890	19,508	11,693	8,247	7,610
Bristol, ...	9,722	30,788	34,551	40,460	39,250
Manchester, ...	1,110	6,114	8,640	16,155	11,070
South Africa, ...	620	....	....	....	....
Antwerp, ...	170	100	....	....	100
Leith, ...	100	50	125	125	....
Aberdeen	50	150	450	850	1,100
Cardiff, ...	....	155	....	150	500
Other Ports, ...	....	....	100	....	....
	80,565	154,322	160,344	231,595	237,302

It will be noticed from the above figures that there has been a steady falling off in the export of eggs since 1900, and we merely publish the figures to show what the possibilities are along this line.

Because there has been a falling off in the Canadian exports since the year 1900, it does not follow that the stock was not wanted. In fact, the conditions have been just the reverse, and the prices available on the other side will bear out the statement. But, on the other hand, the shrinkage in exports has been caused by the non-attention given to the work by Canadian farmers. As far as shipments of eggs from New Brunswick are concerned, we might add that very few are made, yet we hope to see the time when we can boast of doing more than simply supplying our own people.

HAY.

The return of hay this season was very much less than it has been for many years, due to the unfavorable season; but, at the time of writing, there seems to be no great increase of prices, except in local markets, on account of the shortage, which can be accounted for by their having an abundant crop in the Provinces of Ontario and Quebec, much of which is finding its way into the markets formerly used by the Maritime Provinces. In consequence of this, we do not anticipate any extremely high prices for some time to come. We are convinced, however, that too much of our hay finds its way out of the country, and too little of it is used on the farm, especially when prices are high. Since the South African boom in hay, there seems to be less shippers, and those who had money enough left to continue the business, have, in a measure, practically recuperated the losses they made at that time, and are continuing to do a safe business both for the producers and the middlemen, for with hay ranging in price from $6.50 to $8 per ton, farmers seem to be quite satisfied with the returns, yet it has been proven by experiments that every ton of hay draws about $4.50 worth of fertility from the soil, but so long as the fertility holds out, some money may be made from selling it from the farm in its raw state. There would be nothing against the system, provided a sufficient quantity of other feeds were grown to properly feed a sufficient quantity of stock, to supply the fertility drawn from the soil by the ripening of the other crops; but, as a rule, in this Province, this is not done as extensively as we would wish, and in time we will see the results forcibly brought before us, and then spend years of hard toil in trying to undo the damage done through following the above system. We are glad to say, however, that in some sections of the Province a change is being brought about in this respect, and we must compliment them on their forethought in the matter.

PASTURES.

As has already been intimated in foregoing pages, pastures during the season were not equal to the growth during the last few years, and the need of supplementary food has become very apparent, if stock (especially milch) is to be kept. It has been pointed out in former reports the great necessity of the farmers preparing for short pasture supply, by sowing peas, oats, and vetches at intervals during the season, so that they could be fed green to the stock in the event of an unfavorable season for pasture growth. We can hardly understand why this is not universally done, when so little time and labor is required to overcome the difficulty, but the fact remains that with the exception of the best dairy sections, the system is not in general use, and the result is very noticeable indeed.

For the production of milk, cows require succulent food in abundance, and if they do not get it, the result is a short milk supply, with the stock out of condition, which has a bad effect upon the dairy industry as well as the farmers' pocket books. It is not uncommon to hear farmers say that with cheese and butter selling at low prices, they cannot afford to spend any extra time and money in food for their stock, but this is entirely a wrong view of the situation, from the fact that the lower the price of the manufactured article the greater should be the endeavor to make the stock produce more of the raw material. Herein lies the secret of successful farm work. The cost of production must be decreased to the lowest possible point, for if it is costing 70 cents to produce 100 pounds of milk from a cow giving 2,500 pounds during the milking period, on ordinary pastures and the ordinary winter ration, and the value of the milk at the factory is only 70 cents per 100 pounds, there is not much money in the speculation; while, on the other hand, if the same stock is supplied with an abundant supply of peas, oats, and vetches when pastures get short, and a better winter ration, she will no doubt double her milk supply, thereby very materially lessening the cost of production, while the value of the raw material, delivered at the factory, remains practically the same.

It seems to be a common idea among farmers that supplementary pasture entails considerable expense, which is not the case. When you consider the fact that two acres of the food above mentioned will supply a herd of eight or ten cows with all the food required outside of the pasture, then, in event of ample pasture, the crop of peas, etc., may be allowed to ripen, and the grain ground and fed to other stock, consequently, in no case is the labor lost.

In last year's report, we urged upon the farmers and dairymen the necessity of preparing for trouble in this connection, and we know that in some instances our suggestion was carried out with good results, but, generally speaking, the old idea prevailed, which has been amply proven by the returns from our cheese factories and creameries, and the general condition of the stock, which has meant a serious loss to the country.

We might mention in this connection that with other farm crops, taken one year with another, the average seems to be fairly well maintained, simply because no less time and attention is given to the completion of the work, but the same cannot be said with the production of the dairy cattle, for there is no line of work or no class of animals which seem to show the results of poor treatment so much as they do; while, on the other hand, there is no line of work which will show the result of intelligent work and treatment as dairy stock. We cannot afford to do any more haphazard dairy work, for it means failure to those engaged in it, and when success is so easily within the reach of all, we would again strongly urge our farmers to give it the attention it deserves.

ILLUSTRATION ORCHARDS.

Following out the plan outlined in last year's report, eight orchards were set during the spring of 1904.

The following directions were issued as to planting and care:—

DIRECTIONS FOR PLANTING.

Measure off the ground and place stakes thirty feet apart each way, being careful to keep them in line.

Dig the holes considerably larger round and deeper than the space to be occupied by the roots, fill in sufficient of the top soil in bottom of hole to bring it up to required depth for tree to set.

With a sharp knife trim off all broken roots and superfluous branches, and cut back the remaining top about one-half of last year's growth.

Set the tree about one inch deeper than it was in the nursery, placing the roots in their natural position. See that the top soil is well filled in around the roots. This will have to be done with the fingers. After the earth is well filled in above the roots, firm it well down with the foot.

The last two or three inches of earth on the top should be left loose.

CULTIVATION.

As soon as the ground gets in condition for working, cultivate once a week, or often enough to keep down all weeds and grass, and keep a mulch of loose earth on the top.

If a cultivator is used, a strip four feet wide on each side of the row of trees, or eight feet in all, will be sufficient for the first two years. If a harow is used, a strip the width of the harrow will have to be kept cultivated on both sides of the tree. Use as short a whiffletree as possible, and be careful not to injure the trees with cultivator or harrow.

Keep up the cultivation as above till about 15th July, then seed the strip with crimson clover, covering lightly.

Allow the clover to grow till the frost kills it, when it will fall down to form a cover crop for the winter. Do not cut or pasture it.

Keep stock out of the orchard.

The following spring, plow the clover sod with a shallow furrow, or work it up with a cultivator or disc harrow, and follow same practice as the year before.

The setting was done under personal supervision of officers of this department, and only very few trees failed to grow.

With one exception, the instructions as to cultivation were very well carried out, and the trees made a very good growth.

Crimson clover seed, sufficient to seed the strips, was furnished by the department. The clover in most cases made a growth of six to eight inches high. In one case, when it was not sown till August, only a poor catch was obtained, and the plants did not get over three inches high.

Wood veneer, cut six inches wide by one-thirty-second of an inch thick, and long enough to reach from the ground to the first limbs, was furnished for all the orchards (except two), with instructions to wrap each tree, to prevent girdling by mice, and assist in preventing sun scald, the wrappers to be taken off about the first of May.

The following table gives the location of the orchard set in the spring of 1904, with the number of trees of each variety, apple and plum:—

Location of Orchard and Owner's Name	APPLES									
	Famuese	McIntosh Red	Wolfe River	Baxter	Arctic	N. J. Greening	Grimes' Golden	Milwaukee	Stark	Ben Davis
Florenceville, Carleton County, H. H. McCain	10	10	10	10	10	10	10	10	10	10
Waweig, Charlotte County, W. E. Armstrong	10	10	10	10	10	10	10	10	10	10
Buctouche, Kent County, James Barnes	10	10	10	10	10	10	10	10	10	10
Sussex, Kings County, H. N. Arnold	5	5	5	5	5	5	5	5	5	5
Jubilee, Kings County, S. Z Dickson	4	4	5	5	10	10	10	10	4	10
New Jerusalem, Queens County, W. Teed Inch	5	5	5	5	5	5	5	5	5	5
St. John, St. John County, B. V. Millidge	5	5	5	5	......	......	......	5	......	......
Upper Sheffield, Sunbury County, Isaac Stephenson	......	......	......	......	......	......	......	......	50	......
	49	49	50	50	50	50	50	55	94	50

Four varieties of plum were set, viz., Imperial Gage, Lombard, Hawkeye, Glass' Sudling.

Twenty-four plum trees being set in each two-acre orchard, and twelve where only one acre was set.

Total number of apple trees set, 547.

Total number of plum trees set, 132.

It is the intention to continue this work until each county has at least two acres of orchard.

It will be noticed that in some cases the two acres is in one block, while in others, two orchards of one acre each, are located in different sections of the county.

Arrangements have been made for setting ten more orchards during the spring of 1905, in the following locations:—

Madawaska County, at Clair and St. Leonards.

Victoria County, at Andover and New Denmark.

York County, at Queensbury.

Gloucester County, at North Tetagouche.

Northumberland County, at Chatham and Doaktown.

Queens County, at Chipman.

St. John County, at Golden Grove.

The same varieties will be set as in 1904, except that Wealthy and Dutchess will be substituted instead of R. I. Greening and Grimes' Golden. In plums, the Yellow Egg will take the place of Glass' Seedling.

The conditions under which these orchards are set are as follows:

The owner of the land will prepare it the previous season by thorough cultivation, and working in a liberal application of manure.

This department will supply the trees, and furnish a man to oversee the planting, the owner of the land to supply the labor, and sign an agreement that for ten years from the date of planting the orchard, he will cultivate and care for it as instructed by the Commission of Agriculture. The orchard and all the products therefrom being the property of the owner of the land.

Applications will be received for setting not less than one acre, and not more than two for any one locality.

CROP REPORT.

Since the year 1898, statistics of the five leading crops of grain and roots have been collected by the department.

The mode of collecting these reports is perhaps the most detailed of any Province in the Dominion, entailing a large amount of labor on the department officers. A circular, with headings for acres and bushels of each crop, is sent to the secretary of school trustees in each school district in the Province (some sixteen hundred in all), with the request that he collect the crop statistics for his school district, and forward the same to the department.

I am pleased to say that in the great majority of cases these gentlemen have done their work well, for which we beg to sincerely thank them. In return, a copy of the report is sent to each correspondent.

These returns are obtained during the fall and early winter, just after thrashing, and while the results are fresh in the minds of the farmers.

It should be borne in mind, in making comparisons between crop statistics collected by the department and by census returns, that the census was taken in March and April of 1901, and the returns given, must, of course, be for the crop of 1900.

With the exception of potatoes, nearly all crops in the Province in 1904 were less than during the season of 1903, caused largely by the cold, wet spring, making it difficult to work the land, with the result that less acreage was planted. During June and the first half of July, there was very little rainfall, resulting in a small growth of straw and light grain crops generally.

Only for the fact of potatoes rotting badly in some sections, this crop would have been exceedingly large. The failure from rot can be largely controlled by protecting the vines in proper season by spraying with Bordeau Mixture, with a force pump sufficiently strong to send a fine spray. Directions as to how to make the mixture, and when to spray, can be obtained on application to the Department of Agriculture, Fredericton.

For tables of crop reports, see next pages.

WHEAT.

The following table shows the acreage and yield by Counties and for the Province: —

COUNTY.	1904.			1903.			1902.			1901.			1900.		Average for last 7 yrs.
	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	
Albert........	395	7,499	19.0	408	9,472	23.2	421	8,529	20.2	391	7,539	19.2	405	8,253	....
Carleton......	2,785	59,143	21.2	2,984	67,881	22.7	2,951	62,945	21.3	3,117	64,216	20.6	2,985	62,450	....
Charlotte.....	78	1,551	20.0	77	1,737	22.5	110	2,294	20.8	129	2,668	20.6	140	2,955	....
Gloucester....	2,947	50,933	17.2	3,079	62,907	20.4	3,616	71,776	19.8	4,825	80,965	16.7	5,389	96,161	....
Kent.........	4,805	72,574	15.1	4,903	98,472	20.0	4,974	97,520	19.6	5,977	104,551	17.4	5,944	108,064	....
Kings........	516	10,330	20.0	534	12,136	22.7	557	11,943	21.4	650	12,781	19.6	654	12,500	....
Madawaska..	782	13,291	17.0	1,070	21,989	20.5	1,236	22,950	18.5	1,482	24,849	16.7	1,470	26,062	....
Northumb'land	2,149	38,098	17.7	2,234	47,737	21.3	2,243	43,932	19.5	2,413	46,610	19.3	2,541	51,725	....
Queens.......	33	621	19.0	53	1,103	20.8	56	1,092	19.5	89	1,741	19.5	80	2,004	....
Restigouche...	471	9,174	19.4	530	11,113	20.9	591	12,222	20.6	654	13,233	20.2	813	15,222	....
St. John......	18	350	19.4	19	421	22.1	3	58	19.3	3	52	19.0	3	75	....
Sunbury......	62	1,169	18.8	74	1,625	21.9	73	1,503	20.5	112	2,566	22.9	151	3,126	....
Victoria.......	1,062	20,985	19.7	1,070	23,444	21.9	1,070	22,048	20.6	1,064	20,642	19.4	1,011	18,378	....
Westmorland..	3,414	57,212	16.7	3,670	78,109	21.2	3,809	76,927	20.1	4,215	78,484	18.6	4,414	79,815	....
York....	893	16,615	18.5	839	18,099	21.5	892	17,911	20.0	889	17,989	20.4	867	17,511	....
The Province.	20,410	359,545	17.6	21,544	456,245	21.1	22,602	453,640	20.0	26,010	478,886	18.4	26,867	504,301	18.1

OATS.

The following table shows the acreage and yield by Counties and for the Province :—

COUNTY.	1904.			1903.			1902.			1901.			1900.		Average for last 7 yrs.
	Acres	Bushels.	Bush. per acre.	Acres	Bushels.	Bush. per acre.	Acres.	Bush-ls.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	
Albert	4,158	126 715	30.4	4,014	132,551	33.0	3,783	113,558	30.0	3,831	102,514	26.7	3,659	101,332	....
Carleton	42,507	1,327,090	31.2	43,716	1,502,713	34.3	42,982	1,428,325	33.2	41,839	1,340,035	32.0	42,688	1,460,291	....
Charlotte.....	3,965	127,188	32.0	4,195	150,196	35.8	3,866	132,992	34.4	4,179	126,518	30.2	3 837	125,982	....
Gloucester....	11,833	343,421	29.0	11,739	359 103	30.5	10,501	310,376	29.5	12,431	282,346	22.7	12,084	309,805	....
Kent	16,330	367,677	22.5	16,525	493,407	29.8	15,069	425,279	28.2	18,987	387,050	20.3	17,851	420,027	....
Kings........	15,707	463,044	29.4	15,326	501,129	32.6	14,513	457,667	31.5	15,147	393,733	25.9	14.795	413,597	....
Madawaska ..	10,935	287,436	26.2	10,278	304,983	29.6	10,010	266,953	26.6	12,079	276,344	22.8	11,405	277,167	....
Northum'land.	10,137	293,304	28.9	10,031	323.061	32.2	9,726	289,677	29.7	12,053	279,484	23.1	11,368	339,838	....
Queens.......	7,003	193,009	27.5	7,241	215,181	29.7	7,278	202,110	27.7	7,592	191,652	25.2	7,708	207,415	....
Restigouche ..	5,161	147,921	28.6	5,229	169,828	32.4	5,547	168,396	30.3	5,906	159,801	27.0	5,822	165 563	....
St John	2,416	73,492	30.4	2,295	81,460	35.4	2,252	79,796	35.4	2,159	71,220	32.9	1,982	71,994	...
Sunbury	2,859	86,372	30.2	2,700	89.601	33.1	2,665	86,832	32.5	2,909	76,291	26.2	2,943	81,377	....
Victoria	11,199	341,402	27.8	10,713	369,556	34.4	10,615	341,329	32.1	10,677	313,876	29.3	10,226	326,778	....
Westmorland .	14,639	406,482	27.7	13,741	452,317	32.9	13,493	402,525	29 8	14.592	373,848	25.6	14,214	385,844	....
York	19,225	568,709	29.5	19,166	646,521	33.7	19.613	607,535	30.9	19,733	570,280	28.8	18,410	594,680	....
The Province	178,074	5,153,262	28 9	176,909	5,791.607	32.7	171,913	5,313,349	30.8	184,114	4,944,992	26.8	178,992	5,281,690	29 0

BARLEY.

The following table shows the acreage and yield by Counties and for the Province:—

COUNTY.	1904.			1903.			1902.			1901.			1900.		Average for last 7 yrs.
	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre	Acres.	Bushels	Bush. per Acre.	Acres.	Bushels.	
Albert	132	2,877	21.7	139	4,082	29.3	129	3,352	26.0	109	2,541	23.3	102	2,620	....
Carleton,	301	7,862	26.1	310	9,158	29.5	372	10,718	28.9	365	9,505	26.0	405	12,091	....
Charlotte	183	4,964	27.1	242	7,109	29.3	249	6,848	27.5	281	6,976	24.8	297	8,593	...
Gloucester	277	6,428	23.2	303	8,558	28.2	320	8,376	26.1	390	8,094	20.7	433	11,039	....
Kent	256	4,668	18.2	275	6,627	24.0	289	6,163	21.3	306	5,985	19.5	355	6,573	....
Kings	262	5,809	22.1	271	6,981	25.7	307	7,900	25.7	259	6,405	24.7	283	6,909	....
Madawaska	267	5,466	20.4	237	5,141	21.6	279	6,186	22.1	278	5,187	18.6	266	4,873	....
Northumberland	70	1,527	21.8	60	1,342	22.3	57	1,277	22.4	68	1,395	20.5	67	1,447	....
Queens	42	998	23.7	41	1,089	26.5	58	1,361	23.4	107	2,325	21.7	129	2,859	....
Restigouche	111	2,646	23.8	116	3,022	26.0	118	2,825	23.9	173	4,290	24.7	166	3,853	....
St. John	3	64	21.3	16	387	24.1	20	417	21.0	29	620	21.3	34	704	....
Sunbury	133	3,064	23.0	124	3,049	24.5	157	4,130	26.3	146	3,225	22.7	194	5,868	....
Victoria	118	2,948	24.7	89	2,276	25.5	85	2,052	24.1	94	2,057	21.8	167	3,906	....
Westmorland	1,390	30,930	22.2	1,560	37,940	24.3	1,446	36,210	25 0	1,415	30,936	21.8	1.792	38,783	....
York	361	8,521	23.6	330	8,358	25.3	349	8,886	25.4	373	9 899	26.3	363	10,104	....
The Province	3 906	88,772	22.7	4,113	105,117	25.1	4,235	106,701	25.1	4,396	99,540	22.6	5,053	120,222	23.0

BUCKWHEAT.

The following table shows the acreage and yield by Counties and for the Province : —

COUNTY	1904.			1903.			1902.			1901.			1900.		Average for last 7 yrs.
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	
Albert	2,669	53,975	20.2	2,491	55,345	22 2	2,529	55,294	21.8	2,525	53,189	21.0	2,300	49,648	....
Carleton	10,552	229,459	21.7	10,640	251,962	23.6	10,751	267,597	24.8	11,617	268,375	23.1	11,234	268,773	....
Charlotte	682	15,677	22.9	653	16,804	25.7	622	16,483	26.5	645	14,901	23 1	691	16,927	....
Gloucester	877	17,271	19.6	896	20,743	23.1	912	21,147	23.1	1,217	22,975	18.8	1,386	31,172	....
Kent	5,395	98,210	18.2	5,834	127,868	21.9	6,076	135,923	22.3	7,030	137,697	19.5	6,722	141,711	....
Kings	10,231	207,950	20.3	10,288	238,705	23.2	10,096	246,137	24.3	11,176	229,741	20.5	11,212	239,864	....
Madawaska	5,787	110,569	19.0	5 683	118,865	20.9	6,251	133,302	21.3	7,346	142,991	19.4	7,398	142,693	....
Northumberland .	776	15,293	19.7	768	17,639	22.9	755	18,311	24.2	1,202	24,473	20.3	1,176	26,416	....
Queens	5,624	115,648	20.5	5,279	119,777	22.6	5,523	130,414	23.6	6,556	124,547	18.9	6,673	132.503	....
Restigouche.......	558	11,880	21.2	603	13,782	22.8	647	15,975	24 6	744	16.311	21.9	783	18,186	....
St- John..........	494	11,007	22.2	462	11,892	25.7	386	10,294	26.6	321	7,391	23.0	304	8,772	....
Sunbury	1,567	33,526	21.3	1,447	35,548	24.5	1 505	37,674	25.0	1,710	35,900	20.9	1,72 9	36,076	....
Victoria	3,341	76,218	22.8	3,381	83,498	24.6	3,417	87,553	25.6	3,780	89,264	23.6	3,792	87,318	....
Westmorland	6,291	125,196	19.9	6 279	147,567	23.5	6,332	144,456	22.8	6,874	135,018	19.6	6,805	142,060	....
York	6,730	140,171	20.8	6,791	164,734	24.2	7,220	181,171	25.0	7,371	176,704	23.9	6,960	185,485	..
The Province...	61,574	1,262,050	20.4	61,495	1,424,728	23.1	63,022	1,501,731	23.8	70,114	1,479.477	21.1	69,165	1,527,610	21.6

POTATOES.

The following table shows the acreage and yield by Counties and for the Province:

COUNTY.	1904.			1903.			1902.			1901.			1900.		Average for last 7 years.
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre	Acres	Bushels.	
Albert	979	160,855	164.3	930	139,101	149.5	946	124 225	131.3	894	96,617	108.0	854	126.994	.....
Carleton	3,309	574,303	173.5	3,297	452 280	137.4	3,329	336,802	101.1	3,751	417,230	111.2	3,949	517,511	.....
Charlotte	1,318	211,369	160.3	1,257	176,026	140.0	1 282	152,044	118.5	1,333	145,015	108.7	1,257	154,053	.....
Gloucester	4,364	654,630	152.3	4,312	567,081	131.5	4,525	537,505	118.3	4,814	479,169	99.5	4,939	511,860	.....
Kent	4,861	692,372	142.4	4,911	654,990	133.8	5 028	604,587	120.2	5,392	582,614	108.0	5,560	731,793	.....
Kings	2,575	393,892	152.9	2,612	381,338	145.9	2,610	337,402	129.2	2,818	299.958	106.4	2,991	369,025	.....
Madawaska	1,261	161,985	128.4	1,057	147,471	139.5	1,218	127,833	104.9	1,480	139,158	94.0	1,502	153,739	.....
Northumberland	2,674	384,468	143.7	2,560	334,694	130.7	2,619	308 991	118.0	2,965	304,922	102.8	2,840	340,298	.....
Queens	1,797	245,946	136.8	1,728	229,985	133.0	1,802	196,460	109.0	1,917	186,051	97.0	2,074	235,711	.....
Restigouche	1,156	180,550	156.1	1,162	146,358	125.9	1,181	129,120	109.3	1,165	143,105	122.8	1,181	138,028	....
St. John	942	129.351	137.3	978	129,800	132.7	1,051	128,521	122.2	1,023	102,900	100.5	947	106,572	.....
Sunbury	1,196	167,194	139.7	1,185	150,842	127.2	1,261	129,375	102.5	1,345	140,345	104.3	1,346	146,557	....
Victoria	1,000	148,352	148.3	921	122,477	132.9	902	90,737	100.5	836	89,939	107.5	838	94,276	.....
Westmorland	4,748	796,066	167.6	4,798	667,246	139.0	4,827	623,765	129.2	4,848	599,651	123.6	4,867	806,263	....
York	3,060	478.931	156.5	2,806	387,217	137.9	2 954	329.272	111.4	2,946	350.804	119.0	2 865	365,089	.....
The Province	35,240	5,380,264	152.6	34,514	4,686,906	135.7	35,535	4.156,638	116.9	37,527	4,077 478	108.6	38,010	4,797,769	122.4

TURNIPS.

The following table shows the acreage and yield by Counties and for the Province:—

COUNTY.	1904.			1903.			1902.			1901			1900.		Average for last 6 years.
	Acres.	Bushels.	Bush. per. acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels	Bush per acre.	Acres.	Bushels.	
Albert	179	86,183	481.4	167	85,653	512.8	172	71,400	415.1	202	54,889	271.7	211	57,744	.....
Carleton	586	289,405	493.8	666	342,281	513.9	703	354,374	504.0	845	302,947	370.3	753	278,859	.....
Charlotte........	378	188,845	499.5	367	189,438	516.1	427	192,091	449.8	621	219,089	352.8	651	230,182	....
Gloucester.......	208	104,015	500.0	205	100,213	488.8	317	107,212	333.2	473	65,314	138.0	460	78,386	.....
Kent............	245	116,173	474.1	272	134,301	493.7	385	143,550	378.0	650	126,734	149.9	613	114,107	....
Kings	767	382,855	499.1	752	409,388	544.3	793	399,683	504.0	952	256,332	269.2	891	242,802	.....
Madawaska......	43	20,415	474.7	44	21,892	497.5	47	22,848	486.0	122	19,433	159.2	131	20,744	.....
Northumberland .	287	142,500	496.4	269	135,185	502.5	305	142,479	467.2	519	101,276	195.1	466	89,253	.. ..
Queens	206	102,998	499.9	198	99,571	502.8	202	104,612	512.0	307	79,474	258.8	325	89,308	.....
Restigouche	80	39,864	498.3	74	37,378	505.1	73	34,755	476.0	145	28,166	194.2	148	30,225	.....
St. John..... ..	247	133,943	542.2	236	140,050	593.4	263	160,470	598.0	432	95,000	219.9	308	67,452	.....
Sunbury.........	151	76,362	505.7	142	71,774	505.4	130	70,105	539.2	231	61,378	265.7	221	54,125	.....
Victoria.........	133	65,788	494.6	127	65,478	515.5	148	78,194	528.3	205	52,662	256.8	161	42,882	.....
Westmorland	594	298,395	502.3	562	290,482	516.9	498	253,812	509.0	800	215,727	269.0	738	199,359	.....
York......	920	462,764	508.0	920	472,072	513.1	888	487,123	548.6	1,129	421,519	373.3	1,005	354,996	.....
The Province . .	5,024	2,510,505	499.7	5,001	2,595,156	518.9	5,356	2,622,726	489.6	7,633	2,099,940	275.1	7,082	1,950,424	367.7

EXHIBITIONS.

The exhibitions that received Government assistance this year were as follows:—

International, St. John,...	$5,000 00
County, Sackville,...	800 00
County, Centreville, ...	150 00
Maritime Fat Stock Show, ...	800 00
	$6,750 00

County exhibitions were held without Provincial assistance at Woodstock, Sussex, and Chatham.

The International exhibition, held at St. John this year, was, we believe, the best ever held in the Province, both from point of exhibits and attendance. The buildings had been greatly improved, and the grounds put in much better condition than they have heretofore been, while the exhibits brought out were more numerous and of better quality, and the attractions of such a varied character that they proved to be a great source of revenue.

The attendance during the fair was the largest at any previous exhibition for an equal number of days, and there is no doubt but that if a race course was in close proximity to the grounds, the attendance would be materially augmented; but, of course, there have been considerable objections raised as to the advisability of such a move, some claiming that such a course would detract from the exhibition proper, but there seems to be a feeling on the part of visitors that they must be amused as well as educated; and it has been noted, particularly in the Lower Provinces, that an exhibition void of amusements means an exhibition void of funds; and as shows of this kind cannot be successfully run without money, it seems to be necessary to have the amusements. We understand there are a few exhibitions run in Canada without the much-favored horse race, but in these cases there are usually amusements at which the horse takes a prominent part, and is expected to show his endurance, and ability to perform, fully as much as he would on a race course, but in a slightly different manner. It has also been argued that the reason the exhibition horse race should be abandoned is because the trotting or pacing horse is not a desireable or profitable animal to raise; but let this be as it may, there is no doubt in our minds but that as long as there is man, there will also be the race horse and race track. Of course, there is a good deal in the argument against the exhibition race, but the fact remains that if the people demand it they will get it, and it is within the writer's knowledge that thousands of people refrain from going to exhibitions unless there are other attractions than the show of roots, vegetables, and live stock.

We wish to make reference to the very imperfect accommodation for cattle, the sheds being very small and open, while during wet weather visitors find it practically impossible to get over the walks. It is almost a wonder that exhibitors will be satisfied with the accommodation provided, nevertheless, they came out this year stronger than ever. However, we think if the association would construct proper stalls, that the exhibits of cattle would be very largely increased.

In every instance the judges reported fine exhibits, but when references were made to the cattle, some commented on the evident lack of attention given to proper fitting for the show ring, except among the old exhibitors, who have learned from experience what is necessary to get the best results.

The show of horses this year eclipsed that of any previous exhibition, and we were glad to see the Sanborn string of Coach Horses among the number. Horses in New Brunswick seem to be the favorite farm animal, for it is often noticed that an exhibitor who shows horses and cattle, very often has his cattle entirely unfit for the ring, while his horses are invariably in the pink of condition.

The Butter Making Competition, as usual, drew a large attendance, and those in charge were kept busy answering and explaining the numerous questions asked by the crowd regarding the work. Six competitors took part, and each one did most creditable work. As far as the dairy exhibit was concerned, we might mention that it was very small, while the quality, with a few exceptions, was not up to that displayed in former years. Just why this is true is hard to explain, unless it be that not much work was done among the factorymen, by those connected with the show, that would encourage them to exhibit. As to the quality, we may say that our dairy products were never judged by as high a standard as was used this season, which was done for the purpose of showing our factorymen that they had something further to reach out for, than what they had already attained, and we hope that this year's lesson will serve as an incentive for them to still further improve.

The exhibitions held at Woodstock, Chatham, Sackville, and Sussex, like St. John, was an improvement over any previous year, which we think has been largely assisted by the closing up of the numerous little side shows which used to be held by the several Agricultural Societies, which neither had sufficient money to offer prizes that would induce exhibits, nor the inclination to induce exhibitors to in any way fit the stock shown. And in this connection we might say there is plenty of room for improvement even at our larger shows, but with competent judges, such as are selected to award the prizes at the present time, and who are willing and ambitious enough to point out to the exhibitor the principal points where improvement is needed, we believe that this change will soon come about, and at no exhibition was this more strongly emphasized than at Woodstock and Chatham. The show of vegetables and dairy produce shown at the Woodstock exhibition was most creditable, both from point of quantity as well as quality.

We are glad to mention, in connection with the show held at Woodstock, that it was run altogether independent of Government grants, and came out with a surplus, showing that with proper management, and a good show, there is a possibility of making both ends meet.

MARITIME FAT STOCK SHOW.

The Maritime Fat Stock Show, held at Amherst, on December 12th, 13th, 14th, and 15th, proved a very successful one indeed, and the lessons learned by those in attendance will no doubt be turned to good account. It did not require an expert to discern the difference in quality and appearance of the stock placed on exhibition this year and last, which goes to prove that the lessons taught the previous years had the effect of elevating the standard of quality and appearance. For one to look back at our first Fat Stock Show, and compare the unfinished and unfitted stock of that show with the well-fatted and well-fed stock of this year, they would wonder what brought about the change; but it is easily accounted for by the fact that expert judges, delivering expert lectures to the large audiences, telling them what to do, and how to do it, has caused the change. We have often heard it said by farmers that these men, sent out by the several Departments of Agriculture, were book farmers, and in some cases were sneered at, but it has been these men who have shown what others have done, and who had a standard of excellence fixed in their minds that have built up the live stock interests of Canada. Consequently, they should not be called book farmers, for it is only by reading, studying, and comparing, that we are able to have a fixed object before us.

The instructive features of the show of 1904 were superior to those of 1903, because the management had decided that with the improved knowledge gained by attending previous shows, the people would naturally demand something better than they had seen, consequently no trouble or expense was spared to satisfy those in attendance.

We are firm believers in these exhibitions, where comparisons can be made and standards elevated, for there is no winner of a first prize this year who expects to win a like prize another year without he has made an improvement, for he has been stimulated along this line with the belief that the fellow who won second is going to have a first if he can get it, and it is this feeling that makes our shows valuable educators.

THE PROVINCIAL DAIRY SCHOOL.

The Provincial Dairy School opened this year on March 1st, and closed April 2nd; the first two weeks being devoted to the study of butter making, and the last two weeks to cheese making. Students from this Province, as well as from Nova Scotia, and Prince Edward Island, were in attendance, as usual, and seemed to be well satisfied with the work and instructions given. Each year this school is better fitted for giving instructions than it was the preceding one, and at the present time it is equipped with up-to-date appliances in every respect. There are, of course, some features of dairy work that cannot be dealt with in this short course, but it seems to be impossible to hold a longer one, owing to the fact that earlier than March it is practically impossible to secure milk, and to continue the school longer than the first of April interferes with the opening of the factories; consequently, we are practically limited to a four weeks' course.

The value of the Dairy School to the Province can hardly be estimated, for at this place a knowledge of the essential points in dairy work is in a practical way inculcated into the minds of the students in a way that it is not soon forgotten. That this point is true, one only needs to look back but a few years to the time when each maker of cheese and butter was manufacturing milk into a product peculiar to his own ideas and fancy; or, in other words, there was practically no uniformity, and, consequently, low prices prevailed. But at the present time, things are different, for each factory in the Province is manufacturing high-class goods, and obtaining highest prices in whatever market he chooses to sell, thereby establishing the fact that the work done in this connection has been valuable to the Province. Dairy education to the young dairymen of Canada is as important to the well being of this industry as a commercial education is important to the merchant or tradesman, and for the dairyman to simply know how to manufacture cheese and butter is not sufficient; he must of necessity study his business in every particular, and in every detail, because of the ever-changing taste and ideas of the consumer. He must also learn more than the manufacturing end; he must know his market requirements; that is, he must be enabled to satisfy the demand; for example, some markets require butter lightly salted, other markets require butter absolutely saltless, while others require ordinary salting. Should a maker ship his produce to a wrong market, the result is low prices; consequently, he must fully understand his business in every particular. At an up-to-date Dairy School all this information is brought out, and if proper attention is paid by the student, he will leave the school better able to cope with the difficulties which confront him from time to time.

The Dairy School is supported entirely by the Provincial Government for the use of New Brunswick dairymen, and we trust that every cheese and butter maker in the Province will take advantage of it.

PROVINCIAL DAIRY SCHOOL.

1905 Session.

Under the Direction of
Hon. L. P. Farris, Commissioner for Agriculture.

THE STAFF OF INSTRUCTORS.

The instructors are all specialists in their different branches, and are the best practical men that can be obtained.

OPENING OF COURSES.

The Creamery course will begin on Tuesday, Feb. 28th, and close March 10th, 1905.

The Cheese course will begin March 13th, and close March 23rd, 1905.

CREAMERY COURSE.

This course is intended especially for butter makers and their assistants, and will comprise practical instruction in cream separation, butter making, milk testing, and use of starters, factory records, and accounts; care and management of engines and boilers, also breeding, feeding, and management of dairy cattle.

Special attention will be given this season to instruction in making export saltless butter, and the operation of combined churns and butter workers, as well as the old style of churns and workers. The school is equipped with the leading makes of cream separators, and the most improved style of churns, which will place it on a par with any up-to-date school of its kind.

CHEESE COURSE.

All cheese makers and their assistants should take this course, which comprises theoretical and practical instruction in cheese making, milk testing, factory records, and accounts; care and management of boilers, factory machinery and utensils, together with the breeding, eding and management of dairy cattle, and the manufacture of cheese boxes. Before entering either of these courses, students are advised to spend at least one season in a cheese factory or creamery, as we do not consider students who have had no practical experience previous to attending the school competent to manage either.

TEACHING.

The teaching will be free to all students from the Maritime Provinces.

CERTIFICATES AND DIPLOMAS.

Certificates of standing will be given to those who pass all prescribed written and practical examinations, and manages a creamery or cheese factory successfully for one season after taking the course.

THE NUMBER OF PUPILS.

The number of pupils for either course is limited to thirty.

GENERAL CONDITIONS OF ADMISSION.

For admission to the school the applicant must be of at least seventeen years of age, and have a common school education. All students will be required to have two suits of workroom uniforms, consisting of overalls, jackets, and caps of white duck, to be had in the town at a cost of from $1.50 to $2.00 per suit.

The application for admission to the school shall be made upon a blank form, a copy of which shall be sent on demand, in which the pupil will state how long he has been working either as maker or helper.

Applications should be sent in as soon as possible, addressed to the Superintendent of the Dairy School, Sussex.

LODGING AND BOARD.

The students will have in the school, study and workingrooms at their service, but they must sleep and board outside at their own expense.

In the immediate neighborhood of the school, board can be had at from $2.50 to $4.00 per week.

COVERING BREAKAGE.

A deposit of $2.00 will be required of all students to cover possible breakage. This sum of $2.00, if not required for breakage, will be refunded at the end of the course.

L. P. FARRIS,
Commissioner for Agriculture.

Fredericton, N. B., January 1st, 1905.

REPORT OF DAIRY SUPERINTENDENT FOR DISTRICT NO. 1.

Sussex, N. B., December 30, 1904.

To the Hon. L. P. Farris,
Commissioner for Agriculture,
Fredericton, N. B.

Sir — I have the honor to submit herewith my tenth annual report on dairying in District No. 1, for the year 1904.

The past season was an off year for the dairymen, and we have to go back to 1888 to find a season that has been less profitable, not only in this Province, but throughout Canada.

There are two reasons chiefly responsible for this. It is well known that the exporters of dairy produce in Canada, and the importers in Great Britain, suffered enormous losses on the output of 1903, the loss on the fall cheese being estimated at over a million of dollars. To this, along with the depression of industries in England, can be attributed the unsatisfactory conditions prevailing the last season in regard to prices. There was also a shortage in the production of milk in many sections; but this season's business should not discourage the dairymen, for if they strike an average for the last five years, they will find on the whole they have had good prices.

The shortage in milk was due largely to the very severe winter, followed by an exceptionally cold and wet spring. In the month of May vegetation was very backward, the herds, in many cases, not getting on the pastures until the first week in June. The pastures were fairly good until the latter part of July; it being an exceptionally hot month, they became dry and short, especially on the high grounds. And, on account of the backward spring, the soiling crops, that had been sown for supplementary feeding, were not sufficiently matured to be of much value; and, as a result, there was a gradual falling off in the flow of milk at a number of the factories.

The output of cheese in the district shows a decrease of 133,334 pounds, while there is an increase of 62,053 pounds in the output of butter, so that, with the increase in factories, the total quantity of milk supplied was above that of the previous year.

NEW FACTORIES AND IMPROVEMENTS.

There were three new cheese factories, one new creamery, one new skimming station, and two skimming station outfits placed in my district during the season, as follows:—

Lewis Mountain Cheese Factory, Westmorland County, by a joint stock company, of which Jeremiah Keohan is secretary and manager. The greater part of the milk received at this factory formerly went to the Killam's Mills and Salisbury factories, but on account of the expense in hauling the milk, the patrons decided they could operate a factory to better advantage at Lewis Mountain.

Cole's Island Cheese Factory, Queens County, by Alfred West and E. B Keith. This section has never had a factory, and on account of the factory not being ready to open until well on in July, and the severe drought, the output this season was very small; but the promoters are looking forward to better results next season.

St. Martins Cheese Factory, St. John County, by R. Allen Cassidy and Fred J. Bonnell. This factory was not completed until well on in the season, and on account of the poor pastures, and low prices for cheese, it was thought advisable not to open until next season.

Hampton Creamery, Kings County, by Hampton Dairying Company. This creamery began operating about a year ago, and is working up a good business, under the management of the Maritime Dairy Company of Sussex. The chief source of supply is from the cream shipped in by rail, and from the new skimming station established by the Maritime Dairy Company, at Midland, Kings County.

Skimming Station outfits were placed in the cheese factories at Head of Millstream, and Carsonville, in October, and are being operated by the Maritime Dairy Company.

There were also considerable repairs and improvements made at a number of the factories. The butter making and cream room was enlarged, and a new skim milk room added to the Provincial Dairy School building, also new concrete floors, which proved very satisfactory, especially from a sanitary standpoint.

THE MARKETS.

The greater part of the cheese is put up in twins and flats for the local and West India markets; the bulk of the butter is also consumed in the same markets. There is a splendid trade being built up with the West Indies in cheese. Up to last season, no facilities were provided for the proper storing of cheese, that it might be held in good condition to supply orders after the season closed. This difficulty has been overcome by the Sussex Packing Company, which has provided up-to-date cold storage rooms for both cheese and butter.

The condition of the markets during the season, together with the extremely hot weather, were such as would impress upon factorymen the great advantages to be derived from cold storage, which was patronized by a number with excellent results.

EXHIBITIONS.

I attended the Maritime Fat Stock Show, at Amherst, N. S., and, with Messrs. Tilley and Daigle, conducted the milking competition, which proved very interesting, many points being brought out in regard to the variations in the percentage of butter fat from individual cows at different milkings, which should be studied by all patrons of cheese factories and creameries. (A statement of the test will be found on another page of this report.)

I also awarded the prizes on the dairy produce at the Maine State Fair, in Lewiston, where there was a fine exhibit of creamery butter.

PROVINCIAL DAIRY SCHOOL.

The school reopened March 1st, and closed April 2nd, during which time a short course was given in both cheese and butter making. The attendance was about the same as at the last session, there being sixteen students enrolled for the creamery course, and eighteen for the cheese making course. The routine of work was similar to that done at the session of 1903, except that students were required to spend a portion of their time in repairing dairy utensils, under the direction of a practical tinsmith, also in the manufacture of cheese boxes.

Ten students took the examinations in the butter making course, and eleven in the cheese making course. The following marks were made on the different subjects:—

BUTTER MAKING COURSE.

NAMES	Butter Making		Cream Separating		Milk Testing		Outside Lectures	Total Score	Average Per Cent.
	Practical	Written	Practical	Written	Practical	Written			
Percentage	100	100	100	100	100	100	100	700	100
Daniel Dole	92	75	90	75½	90	100	81	603½	86.2
R. C. McCready	70	76	70	51½	90	55	81	493½	70.5
Geo. Little	85	69	85	68	80	70	81	538	76.8
M. H. Lockhart	70	67	70	71	70	65	85½	498½	71.2
John D. McRae	85	65½	80	51½	80	71	82	515	73.5
Edwin Robinson	80	60	88	75½	90	88	75	556½	79.5
Roscoe Jewett	65	59	60	64½	70	76	67	461½	65.9
H. F. Marr	65	57½	60	59	70	65	75	451½	64.5
Wm. C. Reynolds	65	37½	55	41	70	39	68	375½	53.6
Albert McCarty	70	36	50	22	70	20	72	340	48.5

CHEESE MAKING COURSE.

NAMES	Cheese Making		Milk Testing		Outside Lectures	Total Score	Average Per Cent.
	Practical	Written	Practical	Written			
Percentage	100	100	100	100	100	500	100
Andrew Keith	82	65½	75	93	93	408½	81.7
J. Teed Polley	86	51½	80	80	82	379½	75.9
H. F. Marr	40	47	75	73	80	315	63.0
M. H. Lockhart	85	83½	75	70	92	405½	81.1
Roscoe Jewett	80	60	75	78	95	388	77.6
Chas. Clark	78	55½	80	77	51	341½	68.3
Martin Crossman	71	43½	70	52	57	293½	58.7
James Magee	61	52½	75	48	55	291½	58.3
Lewis Hansen	85	47	70	32	55	289	57.8
Chas. Humphrey	80	60	70	24	58	292	58.4
Percy Folkins	83	60	75	58	36	312	62.4

In closing, I wish to extend my thanks to the dairymen and others for the kind assistance rendered me during the season, and I trust that another seven years may roll around before we again have a season such as the one just closed.

I have the honor to be, Sir,
Your obedient servant,

HARVEY MITCHELL.

REPORT OF DAIRY SUPERINTENDENT FOR DISTRICT NO. 2.

To the Honorable L. P. Farris,
Commissioner for Agriculture,
Fredericton, N. B.

Sir — I herewith submit my annual report as Dairy Superintendent for District No. 2 for the year 1904.

My district, which comprises Victoria, Carleton, York, Sunbury, Charlotte, and a part of Northumberland Counties, have, with other Counties of the Province, had a very unfavorable year for the manufacture of dairy products, the reasons for which are easily explained. In the first place, a long, cold winter, with high prices offered for grain and hay, was responsible for cattle being poorly fed, and appearing in the spring in poor condition. In the second place, the prices offered for dairy products were the lowest that have ever been offered for export stock, which proved to be no encouragement to the farmers to offer any extra food to their stock, and as far as the cheese factory sections are concerned, the hand separator has done much to stop the milk supply from going to the cheese factory. Then, the summer was an extraordinary dry one, which resulted in poor pastures, and, consequently, less milk; and, taking Canada as a whole, she has experienced the poorest season for dairy products for many years, although in the Upper Provinces the farmers were in much better position to increase their product than we have been here, owing to their abundant pasture supply and favorable season, and with them the shortage in make is largely accounted for by the low prices.

Unlike the Upper Canadian farmer, the Maritime farmer, generally speaking, do not pay that attention to stock feeding for milk production at any time in the year, except in a very few sections, where dairying has been made a specialty, and in which cases the work has been made to pay a good dividend. We are sorry that the farmers along the fertile valleys of the St. John, which seem to be the most favorable sections for dairy development, do not make a specialty of the work; for it has been proven undoubtedly that there is good money to be made in this connection, but it seems to be a very difficult matter to get them out of the idea of selling hay and oats, and keeping practically no stock, or only sufficient to supply the requirements of the family, and, as a result of this practice, cheese factories and creameries are only eking out a miserable existence. There is no doubt in my mind that too many different lines of work have been attempted, and eventually abandoned, only to settle back to the old method of selling the raw crops from the farm. The policy of shifting from one thing to another must always result in a loss, and I am satisfied that this will apply to the greater portion of my district, especially in Carleton County, which is, without doubt, the finest agricultural county in the Province.

The Danish Settlement, in Victoria County, is still increasing the output of their factories by increasing the output of their cows, and I am satisfied that they are in the money making list of dairymen, because of their endeavours to make one cow provide what two produced a few years ago, which has been done through an organized effort, and close attention to the foundation principles of the industry. I might also add that the French Settlement, of Victoria County, has taken up the work with a determination to succeed. They have begun to recognize the necessity of dairy work, in order that their farms might not become exhausted in fertility, and this season, in spite of the low prices and poor pastures, have increased their output considerably. They are devoting considerable attention this season to the winter feeding of stock, and will reap this reward another year.

NEW FACTORIES AND IMPROVEMENTS.

Two new cheese factories were built in my district this season, one at Foley Brook, Victoria County, and one at Blackville, Northumberland County, both of which were built in the best possible manner. The Blackville factory did not begin operations until July, and only received a small quantity of milk, due to the poor pastures and the altogether unfit condition of the stock. This is the first cheese factory built in Northumberland County, and I trust that the promoters will be amply repaid for the time and trouble experienced in getting it in operation. They are, however, hopeful for success, and no doubt the farmers within reach of the factory will take proper hold of it another year.

The Stanley cheese factory was reopened this season, and done a fair business. This factory was closed during the year 1903, although it is situated in a section of the county noted for its abundant pastures and never-failing springs, but with farmers that are hard to please. This fact is borne out from the support that has been given the factory since it was purchased by Messrs. Douglas Brothers, who have offered every inducement that could be offered in order to get milk, even going so far as to spend $2,000 for the installation of butter making appliances, that their patrons might be satisfied. Yet, after one season's work at butter making, the factory was idle one year, but as before stated, was reopened last season for cheese making.

The Carleton Creamery Company did a fair business this year, but when one looks at the section of country covered by this Company, and the volume of business they do, it is not very gratifying or praiseworthy to those supporting it. I stated in my last report that if the farmers would give this Company their support, Carleton County would have the largest creamery in Canada, for it is located in as fine a section as can be found, but selling hay and oats seem to be the farmer's theme.

There are a few factories at the present time that are in a most unsanitary condition, and as I have been, during the last six years, trying to get the necessary changes made, but without success, I did not give them any attention this year. The practice of allowing floor washings to run through the floors, and remain under the factory, there to develop all kinds of germs and odors, capable of producing all the diseases which human life is heir to, is one that must be stopped if we hope to export our goods successfully.

Leaking vats are another source of danger and unpleasantness, for the odor arising therefrom is no more pleasant to the smell of the visitor than that arising from the ordinary hog pen, while the quality of the cheese and butter turned out at these places is totally unfit for food. The expense that would be entailed in making the necessary changes would not be very great, and the quality of the products, and reputation of the factory, would be improved beyond conception.

The Dairy Act, which was passed at the last session of the Local Legislature, is one that (if vigorously enforced) will correct these faults or close the factories, and, as matters now stand, they might better be closed than to follow in the groove that has been followed. I do not wish to be understood that these remarks are to be taken generally, for there are only a few factories which have persisted in keeping their factories in this unsanitary condition. In almost every instance they have had good makers, whose reputation has been at stake, from the fact that the finest quality of cheese or butter would be materially injured if kept in a factory where the stench from an open sewer was prevalent.

OVER-HEATED CURING ROOMS.

The curing rooms of the cheese factories, generally, are in a bad condition, because of imperfect insulation, thus resulting in an undue amount of heat during the hot weather, which materially injures the flavor and texture of the cheese, and increases the percentage of shrinkage. We are not inclined to attach any blame to the factorymen for this state of affairs, owing to the fact that the factories, when erected, were built in accordance with the best ideas of construction at the time. This fault, however, can be partially overcome by the early shipment of the stock, but in years of low prices the tendency on the part of the factorymen is to hold for higher prices.

If we were placed in the same position regarding cool curing rooms as are our more fortunate Western friends, there might not be any chance for worry on this account, for the Dominion Government has constructed a number of the curing stations in both Quebec and Ontario, where factorymen can ship their green cheese for proper curing.

CARE OF MILK ON THE FARM.

I am pleased to say that this question has received a good deal of attention, and that our cheese and butter makers have experienced less difficulty and trouble in this connection than for many years. It, however, must not be taken for granted that there is no further need of improvement, for we must bear in mind that our competitors are constantly striving to improve, and, consequently, get a market preference. It is only through the utmost care being taken in this respect that we can hope to secure a first place in the world's markets.

QUALITY OF PRODUCTS.

It usually follows that with a year of low prices there is a much larger quantity of what is called local goods manufactured, which always carries more moisture than the export stock, and in this our makers are not to blame, for they have been taught at all times to supply the market with what the market demands, and while a larger quantity of cheese and butter this season was not up to the standard from an export point of view, it was entirely suitable for the local trade.

It might be well to sound a note of warning, however, and advise the makers to change the system another year, when they begin to manufacture the export stock, for the quality will not suit the export trade.

DAIRY SCHOOL WORK.

While attending the Dairy School, I had under my charge the Separator and Cheese Making Departments, and found the students in attendance (with only a few exceptions) a very intelligent class; and I am satisfied that those who passed the prescribed examinations will prove a valuable addition to the makers of the Province. That the Provincial Dairy School is doing a good work cannot be disputed, for the results already in evidence proves the assertion, but there are not enough of those interested in the dairy work taking advantage of the instructions given, and I would urge upon every cheese and butter maker the necessity of keeping in touch with the most up-to-date methods in practice.

In closing my report, I might add that after having spent nine years in the dairying service of the Province, I am severing my connection from the service, and the Department of Agriculture, having accepted a position with the large separator manufacturing concern of P. M. Sharples, of West Chester and Toronto. In doing this I am not in any way losing any interest in the growth and development of the dairy industry, for my business will entirely depend upon it.

I wish to thank the dairymen generally throughout Canada for the very generous way they have at all times received and assisted me, and I can assure them that I shall ever be ready to lend them any assistance which lays in my power.

I wish, also, to thank the Commissioner for Agriculture, and his staff of officers, for their kindly treatment, and to express my desire to render the department any assistance within my power that they may need or wish from time to time.

Wishing the dairy industry every success,

I have the honor to be, Sir,
Your obedient servant,

J. F. TILLEY.

Woodstock, December 30, 1904.

REPORT OF DAIRY SUPERINTENDENT FOR DISTRICT NO. 3.

To the Honorable L. P. Farris,
Commissioner for Agriculture,
Fredericton, N. B.

Sir — I have the pleasure to submit my seventh annual report as Dairy Superintendent for District No. 3 for the year 1904.

The past season was very unfavorable for dairying. Pastures all over my district were very poor during the whole season; and, although much more grain was sown for soiling than usual, yet, owing to the unfavorable season, much less feed was cut. This, along with an unprecedented severe winter, caused the cows to come out in poor condition, and accounts for shortage of butter in my district (about 37,500 pounds), but, on the other hand, the output of cheese was more than doubled, owing to the farmers profiting by previous experience, and putting forth extra efforts to improve their dairy conditions; and had it not been for this fact, the returns they have already received this year would have been materially lessened. These efforts had the effect of increasing the general interest taken in the development of the industry, with the result that in many cases, especially among the cheese factories, more farmers were induced to become patrons, thereby increasing the output of these factories, which has had the very encouraging effect of increasing the output over one hundred per cent., and had the same spirit been exhibited among those interested in creameries, there is no doubt but I would have been able to report an increased butter output.

These lessons will have a good effect, and I am looking for a large increase next season, when we hope prices and other conditions will be more favorable.

While summer dairying is growing, winter dairying, on the other hand, is going backwards. At one time I had hoped that winter feeding would receive more attention. Three creameries, during the first few years of operation, during the winter months, showed an increase, but the output gradually grew smaller, until this winter, there is only one in operation, and very little milk is brought to it. I refer to the St. Louis creamery.

The principal reasons for this are that either lumbering or fishing receives more attention than the cows in the winter, and the stables generally are not what they should be, in order to make winter feeding profitable, although every possible inducement has been offered the farmers in this respect.

INCREASE AND IMPROVEMENTS.

One new cheese factory was built at Rockways, in the County of Madawaska, and made 24,000 pounds of cheese, which is a creditable business for the first year. The factory is well equipped with good machinery, and being located in a good section, in a few years should build up a very profitable business.

Several unsuccessful attempts have been made during previous seasons to reopen the Petit Rocher factory, which has been closed since 1896, when only a ton and a half of cheese was made; but this year, under new management, and in spite of the dry season, six and a quarter tons of cheese were manufactured, and the farmers are well pleased, and will continue.

The Memramcook creamery has changed hands, and is now owned by John B. Gaudet & Son, who are at present building a new ice house and cold storage on improved plans, new floors are being put down, and new and improved machinery added.

In several factories old cream separators will be replaced by new and up-to-date machines.

In the way of improvements, I would suggest to some factorymen that new whey tanks be put in, and to others a better system of drainage. Some factory owners are hard to convince that clean surroundings and a good clean whey tank are two important essentials in the manufacture of first-class cheese.

The cheese factory at Bristol, Westmorland County, which has been in operation since 1895, was not operated this season, the farmers refusing to send in milk in sufficient quantity to pay expenses. This is one of the best farming sections of my district, and a section where the farmers are not raising beef, and is a considerable distance from markets; consequently, they could follow dairying profitably. I hope the factory will reopen next season, and that the farmers will see their way clear to patronize it.

INSPECTION OF FACTORIES.

This work was carried on in the usual way. The absence of adulterated milk at the factories, these last few years, has been a pleasing feature, and was brought about by the general adoption of the Babcock system. Two more factories decided this year to adopt the system, but, unfortunately, at both, the makers did not have sufficient knowledge of testing to warrant making the change, but I hope they will be successful next season, thus leaving only two factories in my district paying by the old pooling system.

At some factories considerable trouble was experienced with cheese box wood, at two of which over one--quarter of the wood could not stand to be made into boxes, and what was used was of such poor quality that it should not have been used at all. I was at the station one morning when sixty-five cheese were being shipped, and, even when carefully handled, nine boxes were badly broken. When this lot, and every subsequent shipment, reached the British market, they must have been in such a condition as to bring discredit to our Province. This question is of vital importance to New Brunswick dairymen, and something should be done at once in the way of securing a better and more uniform package.

I am pleased to note a great improvement in the care of milk at the farm, and, with perhaps two exceptions, an improvement in the quality of butter and cheese. Much more oats and peas are being sown than in former years for summer feeding, but there are still sections where practically none is sown — they are the ones who do not derive much profit from their cows, and should make the change.

INSTITUTE MEETINGS.

During the months of January and February, I addressed thirty-eight meetings in the Province of Quebec, with an average attendance of two hundred and fifty-four, which is a remarkably large attendance.

One feature of these meetings was the number of questions asked, and the general discussions which followed. This the New Brunswick farmers might well copy, that more good may result from the meetings.

On my return from the Province of Quebec, I again took my place on the staff of instructors at the Sussex Dairy School.

After the closing of the School, I held a number of meetings of patrons, previous to the opening of the factories, and spent the balance of the spring in getting factories prepared for opening.

In the month of October, I was one of the speakers at the meetings, but was taken sick, and had to leave the staff at New Denmark.

The attendance, I am pleased to say, was good, considering the fact that our meetings sometimes conflicted with political meetings.

EXHIBITIONS.

I attended the St. John exhibition last fall, and with Messrs. Tilley and Mitchell, conducted the butter making competition, and had charge of the dairy exhibit. I, also, with Messrs, Tilley and Mitchell, conducted the milking test at the Amherst Winter Fair. A report of these exhibitions will be found elsewhere in this report.

I also judged the butter and cheese at Charlottetown exhibition. The exhibit of export butter was not very large, and, while there were a few choice samples, much was not right for export, and was evidently intended for the local market. There was a large exhibit of fancy prints and crocks, the prints being an exhibit of real beauty, rather than quality or uniformity, while the crocks were as good and as uniform a lot as could be found anywhere. The exhibit of cheese was one of the largest I have ever seen anywhere, including St. John. The quality was good, but the main feature of the exhibit was its uniformity, which could not have been much improved on, and certainly reflects great credit on the inspectors and makers of that Province.

In closing my report, I wish to thank all those who have assisted me in carrying on the work during the past season, and hope that next season will be more profitable to the dairymen of New Brunswick than the season just closed.

I have the honor to be, Sir,

Your obedient servant,

L. C. D'AIGLE.

Moncton, N. B., December 30, 1904.

CHEESE FACTORIES IN NEW BRUNSWICK, 1904.

NAME OF FACTORY.	COUNTY.	SECRETARY OR MANAGER.	No. of Patrons.	Lbs. of Milk Received.	Lbs. of Cheese Made.	Lbs. of Milk to one of Cheese.	Price per lb. in cents.	Time in Operation.
*Elgin	Albert	Henry Webster & Son	18	250,000	25,000	10.00	8.50	May 1 to Oct. 31
Wakefield Centre	Carleton	Henry Briggs	17	114,790	11,899	9.64	9.50	June 6 to Sept. 3
Bloomfield	"	George H Stokoe	36	308 564	29 296	10.53	8.50	May 28 to Sept. 26
Glassville	"	John McIntosh	48	378,949	35.866	10.56	9.00	May 30 to Sept. 22
Jacksonville	"	James Good & Son	30	264,764	25,325	10.45	9.25	June 1 to Sept. 23
Bathurst and Beresford	Gloucester	John D Frier	25	219,099	21,523	10.17	9.00	May 25 to Sept. 30
Petit Roche	"	Gerome Comeau	33	123.917	12,372	10.01	10 00	June 27 to Sept. 19
Weldford	Kent	John Morton	23	135,300	12,558	10.74	9.42	June 13 to Sept. 10
McLeod's Mills	"	Frank O. Richard	25	72,847	6,962	10.46	8.75	June 20 to Sept. 1
Sussex	Kings	N. W. Ensleigh	180	18.600	1,575	11.80	11.50	Nov. 1, 1903, to Oct. 31, 1904
Corn Hill	"	James A Brown	55	1,147,030	109.554	10.47	8.25	Nov. 1, 1903, to Oct. 31, 1904
Berwick	"	W. D. Fenwick	32	576.810	56,302	10.24	9.00	May 1 to Oct. 31
Springfield	"	H. A. Myers	11	74,756	7,131	10.48	9.00	May 27 to Aug. 26
Norton	"	R. Allan Cassidy	14	158,119	14,443	10.94	9.00	May 12 to Sept. 16
Havelock	"	C. F. Alward	90	1,572,650	157,265	10.00	8.62	Nov. 1, 1903, to Oct 31, 1904
Lower Ridge	"	Thos. G. Perry	25	461,137	43,549	10.58	8 07	April 25 to Oct. 28
Newtown	"	R. W. Stockton	32	615,375	61,776	9.96	8.25	April 18 to Oct. 31
Penobsquis	"	Albert Sear	36	1,263,398	130,766	9.66	8.75	April 4 to Oct. 31
Mt. Middleton	"	Geo. R Hornbrook	20	428,147	40.795	10.49	8.55	May 3 to Oct. 14
Mechanic Settlement	"	Jas. Webster	17	270,320	25.395	10.64	8.65	May 9 to Sept. 27
Head of Millstream	"	John D Frier	38	542 827	49,449	10.97	8.75	April 18 to Oct. 26
Belle Isle Creek	"	Geo. G. Scovil	17	161.223	15,100	10.67	8 75	May 25 to Oct. 8
Lissonville	"	John D. Frier	35	630,976	61 558	10.25	8.75	April 26 to Dec. 7
Hillsdale Corner	"	John D. Frier	23	342,650	34,265	10.00	8.75	May 16 to Oct. 16
Clover Hill	"	R. Allan Cassidy	45	614,195	59,457	10.33	8.73	April 21 to Oct 31
Corn Hill Corner	"	A Thompson Stockton	29	712,688	66,909	10.65	8.44	April 20 to Oct. 31
Upham	"	John D. Frier	22	313,191	30,125	10.39	8.75	May 5 to Oct. 1
Carsonville	"	John D. Frier	20	213.130	21,401	9.95	8.75	April 19 to Oct. 16
St. Jacques	Madawaska	Jos. M. Lavasseur	37	343.280	34,338	10.00	8.00	June 1 to Oct. 31
St. Francis	"	Arsene Pellettier	30	266,139	26,849	9.90	8 25	May 23 to Oct. 15
Baker Lake	"	Louis Bouchard	27	214.930	22,606	9.50	8.00	May 23 to Oct. 23
Rockway	"	Germain Tourraint	32	238,124	23,933	9.94	8.00	June 3 to Oct. 31

Blackville	Northumberl'd	R. M. Grindley	39	43,335	3,738	11.59	10.00	June 23 to Aug. 20
Hampstead	Queens	N. W. Eveleigh	13	329,245	32,624	10.09	9.50	June 1 to Oct. 31
Chipman	"	Harry King	13	63,418	5,963	10.63	9.50	June 1 to July 31
Gagetown	"	John Dickie	14	112,000	11,200	10.00	9.50	June 1 to Aug. 31
Petersville & Hampste'd	"	Wm. A. Machum	45	320,976	29,987	10.70	8.42	May 30 to Aug. 25
Canaan	"	E. B. Keith	17	254,818	24,009	10.61	8.41	May 16 to Oct. 31
Cole's Island	"	E. B. Keith	24	36,232	3,513	10.31	9.39	July 19 to Aug. 31
Salmonhurst	Victoria	L. H, Lauritson	52	727,657	67,770	10.73	8.50	May 1 to Oct. 18
Drummond	"	S. C. Merritt	29	280,014	26 668	10.50	8.00	May 16 to Oct. 15
Foley Brook	"	Andres C. Jenson	26	244,849	25,909	9.41	8.00	May 18 to Oct. 5
Baie Verte	Westmorland	Walter C Goodwin	24	106 461	9,772	10.88	10.00	June 6 to Sept. 17
Salisbury	"	Robt. T. McCready	43	498,673	49,210	10.13	8.75	May 1 to Oct. 31
Killam's Mills	"	Harry F Hughes	45	514,068	49,265	10.43	8.50	April 1 to Oct. 31
Petitcodiac	"	Harry F. Hughes	90	1,053,915	101,338	10.40	8.50	Nov. 1, 1903, to Oct. 31, 1904
Lewis' Mountain	"	J. Keohan	28	307,686	29,314	10.49	8.50	May 20 to Oct. 15
Prince William	York	N. E. Hoyet	30	311,371	30 242	10.29	9.00	June 1 to Sept. 6
Keswick Valley	"	L. B Christie	18	121,792	11,213	10.86	9.00	May 13 to Aug. 19
Hainesville	"	L. B. Christie	29	119,270	11,569	10.30	9.00	June 7 to Aug. 17
Middle Southampton	"	David Schriver	34	273.405	27,000	10.12	8.75	June 1 to Sept. 30
Canterbury Station	"	Chas. L Tulley	18	132,860	12,780	10.39	8.75	May 28 to Aug. 16
*Stanley	"	Howard Douglas	40	280,000	28,000	10.00	9.00	June 21 to Sept. 1
						Average	Av'ge	Value
In 1904 there were 53 factories in operation.			1793	19,179,970	1,866,426	10.22	8.64	$161,262.01
In 1903 there were 50 factories in operation.			1670	20,301.040	1,996,377	10.16	10.10	205,216.42

*Estimated.

CREAMERIES AND SKIMMING STATIONS IN NEW BRUNSWICK, 1904.

NAME OF FACTORY.	COUNTY	SECRETARY OR MANAGER	Number of Patrons.	Lbs. of Milk Received.	Lbs. of Butter Made.	Lbs. of Milk to one of Butter	Price per lb in cents.	Time in Operation.
Elgin	Albert	John D. Frier	82	1,544,580	68,648	22.50	20.50	Nov. 1, 1903, to Oct. 31, 1904
Woodstock	Carleton	Newton S. Dow	51	418,662		22.46	18.00	May 10 to Oct. 17
Florenceville S.S.	"	Newton S. Dow	35	274 840		22.46	18.00	June 2 to Sept. 17
Simonds S.S	"	Newton S. Dow	27	139,831	56,151	22.46	18.00	May 23 to July 31
Silverdale S.S.	"	Newton S. Dow	33	338.357		22.46	18.00	May 10 to Oct. 7
Northampton S.S.	"	Newton S. Dow	17	89,899		22.46	18.00	June 1 to August 20
*Chamcook	Charlotte	F. E Came	16	246.000	12,000	20.50	20.00	Nov. 1, 1903, to Oct 31, 1904
Buctouche	Kent	M. McLaughlan	28	146.736	7 432	19.74	19.00	May 1 to Oct. 31
St. Louis	"	Fidele Vantour	31	278,908	12,206	22.85	19.50	Nov. 1, 1903 to Oct. 31, 1904
Sussex	Kings	N W Eveleigh	180	6,041,901	280,713	21.52	20.50	Jan. 1, 1904, to Dec. 31, 1904
Waterford	"	John D. Frier	42	841,388	42,069	20.00	20.00	Nov. 1, 1903, to Oct. 31, 1904
Lissonville S.S.	"	John D. Frier	35	23.491	1,189	20.00	21.50	April 26 to Dec 7
Lower Millstream	"	John D. Frier	44	608,633	28,982	20.00	20.00	Nov. 1, 1903, to Oct. 31, 1904
Collina S.S.	"	John D Frier	16	193,994	8.817	22.00	19.50	June 1 to Oct 1
Rockville S.S	"	John D. Frier	38	707.632	34,389	20.57	20.00	Nov. 1, 1903, to Oct. 31, 1904
Carsonville S.S.	"	John D. Frier	15	25,342	1.267	20.00	22.00	Oct. 16 to Nov. 16
Head of Millstream S.S	"	John D Frier	38	23,471	1 290	18.03	22 00	Oct. 26 to Nov. 28
Midland S.S.	"	John D Frier	21	293,562	14.472	20.28	20.00	May 16 to Oct. 31
Hampton	"	John D. Frier	78	702.728	33 378	21.05	20.41	Nov 1, 1903, to Oct 31, 1904
Studholm Butter Co.	"	Joseph Hornbrook	3	72,000	3.500	20.56	21.00	May 1 to Oct 31
Jeffries' Corner.	"	Fred J Bonnell	40	609.298	26,295	23.10	18.00	March 1 to Oct. 15
Hammond River S.S.	"	Fred J Bonnell	20	237 843	10,100	23.54	18 00	May 1 to Oct. 8.
Havelock	"	C. F. Alward	90	335.475	15,975	21.00	20.00	Nov. 1, 1903, to Oct. 31, 1904
Corn Hill	"	James A. Brown	55	178.553	8,885	20.09	21.00	Nov. 1, 1903, to Oct. 31, 1904
*Clover Hill S.S	"	R. Allen Cassidy	31	76,564	3,795	20.18	22.40	Nov. 1, 1903, to Oct. 31, 1904
Berwick S S	"	W. D. Fenwick	29	191,784	8,632	22.21	23.00	Nov 1, 1903, to Oct 31, 1904
St. Hilaire	Madawaska	D. L Daigle	28	206 162	9.818	21.00	17.23	May 16 to Oct. 31
St. Anne	"	Jean St. Pierre	25	224,475	10,615	21 14	17.75	May 30 to Oct. 21
St. Basil	"	J. G. Michaud	53	520,706	24,733	21.05	18.00	May 9 to Oct. 29

Lower St Leonards S.S.	"	Rev. F. Dugal	45	476,094	24,129	19.71	18.00	May 9 to Oct. 31
Chamboard	"	Andrew Levesque	35	368.800	19 150	19.25	18.00	May 15 to Oct 31
St. Leonards	"	Martin & Violette	33	224,905	9,733	23.10	18.00	June 1 to Oct. 1
Albertin	"	Vital Albert & Sons	43	445.424	25.330	17.58	18.50	May 12 to Oct 27
Carron Brook	"	Joseph Labrie	38	286,077	13,975	20.47	18.14	May 16 to Oct 22
*Napan	Northumberl'd	Geo. E Fisher	29	342,696	16 083	21.30	20.00	Nov 1, 1903, to Oct 31, 1904
Falls Brook	Victoria	Rev. F, Dugal	50	572.063	29,024	19.71	18.00	May 9 to Oct. 31
Petitcodiac	Westmorland	Harry F. Hughes	90	733 470	34,500	21.26	20.50	Nov. 1. 1903, to Oct 31. 1904
Killam's Mills	"	Harry F. Hughes	45	25,200	1,200	21.00	20.00	Nov 1, 1903, to Oct 31, 1904
Memramcook S. S.	"	John B. Gaudet & Sons	45	200,000	8,650	23.12	20.00	June 1 to Oct 31
						Average	Av'ge	Value of Product
In 1904 there were 39 factories in operation			1664	19.267 544	907.125	21.29	19.70	$178.707 57
In 1903 there were 42 factories in operation			1466	19,159,173	895,086	21.40	20.38	182,423 00

* Estimated. S.S.—Skimming Stations.

DAIRY REPORT.

During the last number of years it has been our pleasure to report an increase in our dairy output; but this season, in common with nearly all other farm crops, we have to report a shortage in cheese, and only a small increase in butter. The reason for this is twofold. In the first place, a very severe, cold winter, during 1903, was responsible for cattle coming out in the spring in very poor condition, only to find the weather still cold, and the pastures void of grass; and during the entire season conditions were so unfavorable that a great shortage in the milk supply sent to the factories was noticeable. These things, coupled with perhaps the lowest prices prevailing for cheese and butter that Canada has experienced for years, had the effect of not stimulating the dairymen into feeding any extra rations, which would have overcome the shortage in pastures, they thinking that from prices ruling it would be impossible for them to get any returns for the extra food consumed, and before the season was far advanced, it was very obvious what the outcome of the situation would be.

It is much to be regretted that the above conditions did prevail, and that the dairy industry should, as a result, receive a setback, knowing, as we do, the great good its development has done for the farmers of this Province. We are satisfied that the shortage this year is only temporary, and that should more favorable conditions exist during the coming season, a large increase will be reported.

It has been our good fortune, for the last three years, to receive extremely high prices for our dairy products in fact cheese values have been higher than was profitable to the business, inasmuch as the English consumers began to look around for food that would not cost him so much money, which resulted in a curtailed demand, meaning in the end lower prices for the retailer and producer. There are, of course, other factors which influence the price for cheese, a large English make, cheap beef and pork, poor quality, etc. And it has been noticed that when the English consumer makes a change from cheese to some other food, it usually takes from one to two years to get him back, even though low prices prevail.

We do not think, however, the Canadian dairyman has anything to grumble about, when he considers the prices he obtained for both cheese and butter during the last four years, which, when averaged with prices ruling for the past season, will more than make a profitable showing. Consequently, we believe that the New Brunswick dairymen will look at the matter fairly, and strive another season to increase the output from our factories, for it is useless to turn our attention to other lines of work to take the place of the dairy.

There is one thing that has always been very noticeable when conditions exist like have existed in this Province during the past year, and that is the fact when we have cheap cheese we have cheap beef; one must always follow the other, and for the dairymen to switch from one to the other must always mean a loss. We would strongly urge the farmers of New Brunswick to look this matter squarely in the face, and to study it from all its various standpoints before a change is made.

In this country, mixed farming to a certain extent must prevail, but just how far, and to what extent, this work must be carried on, depends entirely upon circumstances and conditions. We are not in a position, as far as beef is concerned, to go very largely into the production of this article of food, from the fact that other countries, having more favorable conditions, are in a position to make cheaper beef than we are, and at the same time, they are able to get at the best markets in the world, consequently realizing paying prices. It takes cheap food, short stable season, low freights, and experienced hands to bring about these results; and when we take into consideration our short pasturage season, long winter, high freights, etc., we have to content ourselves with the fact that there are other lines of work more remunerative to the New Brunswick farmer than beef raising. As far as cheese and butter are concerned, we do not have to depend upon local markets to take the output of our factories; we have the world's markets clamoring for our goods, and who are always willing to pay highest prices, providing the quality is right.

As it stands today, the destiny of our dairy industry is in the hands of a few trained men, who turn the milk supplied them into the finest quality of cheese and butter, and whose existence as cheese and butter makers depends upon the quality of the goods turned out, and in consequence of this, the quality of our dairy products are improving from year to year. This is not true of any other line of farm work, consequently, the quality of goods manufactured on the farm, very largely is fashioned after the ideas and tastes of the one manufacturing. As an example, we might mention the quality of dairy butter, and the factors which keep it in its present condition. It is a well-known fact that dairy butter brings lower prices than creamery stock, the reason for which is lack of uniformity. This is true from the fact that each farm butter maker has his or her idea as to what constitutes a first-class article, and, in consequence, no attention is paid to the ideas of the consumer, who is either compelled to take what is given him by the merchant, or be content to pay a higher price to get the article that is made by experienced hands, and who has made a study of the requirements of the market he is to supply. The same thing applies to many other products of the farm, and the only way to have the matter rectified is by a careful study of our business from start to finish. There are several matters that the New Brunswick farmer must look squarely in the face in reference to his farm work. In the first place, he must consider the result of lack of study of his business. In these days, when agricultural literature is so plentiful, it is very easy to become familiar with the most modern ideas of work; yet very few farm papers or books are found in our farm houses, and in nine cases out of ten, dissatisfaction and discontent is the result of lack of knowledge, and in no class of farm work is this more noticeable than in the dairy, of which practically every farmer must of necessity take a part. We acknowledge the difficulty in obtaining farm help that will take an interest in dairy work, yet the work must go on to a greater or less degree, and we think that if a more careful study was made, a much greater interest would be shown, because the study is an interesting one.

The cost of producing an article is sometimes very seldom looked into, yet all must acknowledge the importance of the point, as it invariably stops leaks which heretofore had not been noticed. If it costs ten cents to produce one pound of cheese, which sells in the market for nine cents, there is not much money in the work, and the dairymen will at once undertake to locate the cause, and will invariably find that he has one or two cows which do not produce enough milk to pay the cost of their keep, and he at once gets rid of them. If he finds it costs six cents to produce one pound of beef, which only brings four cents, he will begin to look for the cause. This all comes about through a study of the business, and a careful observance of the work.

We have great faith in the value of the dairy to the New Brunswick farmer, providing he goes about the work in a thorough business-like way, but if he does not do this, he is taking chances on making a loss that no one engaged in any other business proposition would take. It has been pointed out in another report that the value of the shipments of dairy products is $15,000,000 in excess of the shipments of beef from Canadian points, which, in a word, explains the idea of the Canadian farmer in reference to the most valuable business to engage in. We do not wish to imply that there is no money in beef making when it is properly done, but the fact remains that outside of a few of the most favorable sections of the Province, it is not carried on profitably, due largely to the inferior stock kept for the purpose, coupled with a wrong idea of the requirements of the markets, and a poor system of feeding. A mixture of the beef and dairy type of cattle will not produce profitable beef or dairy products, and in every instance where farmers are making money from following either line of work, you will find him working with a type of cattle peculiar to the business engaged in, and we strongly urge the farmers of this country to follow the advice of the most successful farmers in Canada.

We are quite cognizant of the fact that there is, and has been, a movement on foot by some people in this Province, assisted by some influence from Ontario, to get our people to detract their attention from the dairy industry; but so far they have been unsuccessful, because of the many one-sided arguments advanced, together with statements regarding the dairy industry that are not substantiated by facts. In nearly every instance the argument is advanced that "dairying does not pay," and the reason given is that the cattle are not of the right breed. Our contention is that any man in this Province, who is not making money from his dairy stock, is not properly feeding or properly caring for them, and if these same farmers will not feed the stock they have, they will not feed any other breed. For example, if anyone who saw the condition of the last Government importation of shorthorn cattle would visit the majority of the purchasers, and note the changed condition of the animals purchased, they could easily see the force of the argument that lack of proper and sufficient food is responsible for unprofitable stock. Consequently, the feeding problem is the one that requires first attention; then, if no improvement is noticed, the time is opportune for a change in stock, and not otherwise.

The quantity of cheese manufactured in the Province during the years of 1900, 1901, 1902, 1903, and 1904, is as follows:—

COUNTIES.	1904	1903	1902	1901	1900
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Albert	25,000	62,101	61,754	81,200	65,699
Carleton	102,238	167,035	177,525	294,307	293,726
Gloucester	33,895	29,987	32,869	38,641	50,571
Kent	19,520	12,188	7,511	14,823	35,362
Kings	986,815	1,021,080	953,587	780,523	760,591
Madawaska	107,726	32,915	69,595	80,080	69,683
Northumberland	3,738	....	....	....	....
Queens	107,296	154,440	139,379	107,371	78,184
Sunbury	....	5,831	10,000	9,000	12,000
Victoria	120,347	119,700	68,419	62,729	49,700
Westmorland	238,899	256,516	239,429	209,909	269,442
York	120,804	134,584	150,665	208,787	227,474
	1,866,426	1,996,377	1,910,733	1,887,370	1,882,432
Net decrease	129,951				

LOCAL EXPORT CHEESE TRADE.

YEAR.	Lbs.	Value.
1904	1,251,727	$108,149 81
1903	1,258,880	127,147 48
1902	1,209,890	120,021 08
1901	1,195,097	110,915 00
1900	1,184,323	119,379 75
1899	1,112,257	95,654 51
1898	832,767	66,621 36
1897	420,726	37,839 42

The exports of cheese this season has been much smaller than usual, due entirely to the low prices for export goods, and the fact that the local markets have been willing to pay about one-half cent per pound more than could be obtained for shipments abroad, but for, of course, a limited quantity. There are, however, quite a large quantity of cheese still in the buyer's hands, which, no doubt, will be exported late in the season, but from the factory returns we must accept the statements made regarding local sales.

Maritime exporters did a very careful business this year, and bought at very low prices, because of the large losses made by them during the season of 1903. We have no doubt that from the prices they purchased at this season, they have fully recuperated, and we can reasonably expect fair prices during 1905.

We still have the same encouraging report of quality from outside markets, whenever it is possible to get our cheese on the other side properly branded with our own factory brands, but in many instances these marks are removed, and the consumer knows nothing of the Province producing it, except that it was made in Canada. Here, again, is where our new Dairy Act can render us good service, and another year it should and will be vigorously enforced.

We do not wish the cheese makers to become at all flattered at these good reports, for they have a very important duty to perform in keeping up with the countries who are competitors, for they are each year improving the standard of quality, and we must of necessity do the same, or fall in the rear. We would suggest that the makers do more missionary work among their patrons, along the line of improving the quality of the milk produced, for herein is the secret of success. Much other work of a very important nature could also be done by the several makers along the lines of feeding and caring for stock, as a profitable or non-profitable result is decided upon these points. Consequently, we would suggest that the makers do everything in their power to push this work along, and assist the department in building up the industry.

CHEESE EXPORTS.

The export trade in cheese has, in accordance with the make, fallen off about 81,945 pounds, while the loss in value is even greater, due to the drop in price about two cents per pound. As has already been pointed out in previous reports, the exports are taken from the figures taken from our factory returns, and which do not represent the actual quantity sent forward from the fact that large quantities are sold to local merchants, and reported as local sales, which are shipped to outside markets later in the season. Of this quantity we can get no definite record, and in consequence the quantity here reported is well within the mark, yet our exports show the sum of $101,687.18, which speaks well for our trade, which has, for the past number of years, been steadily advancing.

The reports on quality is, and has been, very satisfactory, and if factorymen each year put forth their best efforts in encouraging the farmers to produce better milk, as well as improving their factories and system of manufacture, there is no need to fear for a market. It is unfortunate that such conditions have prevailed this year that would cause a decrease in make, and necessarily in exports, but, as has been already noted, what was true with us in New Brunswick was also true all over Canada.

One thing that our farmers should not lose sight of is the fact that when they are manufacturing cheese and butter, they are manufacturing an article of food which always finds a market at reasonable prices, and at the same time they are engaged in a business that is building up their farms, and consequently increasing the value, and we would urge them to faithfully stand by a business that is not sapping the life from the soil.

Factorymen, too, should carefully look after all the details of their work, such as boxing, shipping, branding, etc., for the English buyer will seriously object to everything that is not right, which will result in lower prices.

The following table shows the exports of cheese, with value as per factory returns, for the past eight years:—

Year.	Lbs.	Value.
1904	1,176,935	$101,687 18
1903	1,258,880	127,147 48
1902	1,209,890	120,021 08
1901	1,195,097	110,915 00
1900	1,184,323	119,379 75
1899	1,112,257	95,654 51
1898	832,767	66,621 36
1897	420,726	37,839 42

BUTTER EXPORTS.

Unlike our cheese exports, our butter shipped abroad has made an increase of 12,039 pounds, but owing to the decrease in values of about one cent per pound, we did not receive as much money, but a steady trade is growing for our goods, and our reputation is fast gaining ground as a dairy province.

There seems to be a feeling arising in the part of our dairymen to develop the butter industry, rather than the cheese, and large numbers of farmers are entering into winter dairying each year, who a few years ago would not milk their cows, as a rule, later than December. It has taken considerable agitation to work this condition about, but now that it is started, we have no doubts as to its success.

We are also aware of the fact that much more creamery stock is being consumed in our local markets than was previously used, and this growing demand has tended to drive many private dairymen into co-operative work.

There is much, however, for these men to learn in the way of feeding, in order that profitable results may follow.

As far as quality is concerned, we have no complaints to report, even though a large quantity of the butter made was entirely without salt, and, in some cases, held for two or three months. Saltless butter is what is demanded now by exporters, and it is for us to satisfy these demands in order to meet competition. The trade that has sprung up in the West Indies for butter is a growing one, but their requirements are for an entirely different article from what is shipped to England, and, in consequence, this butter, as a rule, is made on order.

The exports for the past eight years are as follows:—

Year.	Lbs.	Value.
1904	907,125	$178,703 62
1903	895,086	182,423 00
1902	750,911	153,063 74
1901	542,646	111,034 59
1900	462,606	94,618 56
1899	303,905	58,494 40
1898	98,620	18,557 92
1897	41,768	7,852 38

Thus, it will be seen that since 1897 we have made a rapid stride in our butter exports, which must mean that the quality was right, when we consider the fact that prices have been equal to any Canadian made stock, which should stimulate the dairymen into producing more milk, and consequently more butter. We do not, however, believe that it would be wise to pay less attention to cheese than formerly, but 90 per cent. of the farmers of this Province could keep more cows than what they now have, providing they would not market so much of their hay and grain, which practice is having a very deleterious effect upon the soil.

CANADIAN EXPORTS.

The exports of cheese this season from Canadian ports have taken a rather discouraging turn, and from the port of Montreal there was a falling off in quantity of 11.73 per cent., or 281,293 boxes, over 1903, while the shrinkage on the returns to the farmers was still greater, as the price realized was, on an average, two and three-quarter cents per pound less than the previous year, which has meant a loss of over seven million of dollars. While the exports of butter have made an increase, the loss still to the dairymen has netted about five and three-quarter millions of dollars. The causes for this have been partially pointed out in the preceding pages, and it is unnecessary to rehearse them here, suffice it to say, that the depression in industry in England, coupled with the loss made on stocks held by importers, as well as exporters, during 1903, and in the latter case had to be made up, has had the above mentioned effect of lowering prices. We are inclined to believe that exporters have got this money back, and that prices another season will be profitable ones.

It is seldom that we get low prices and a small make during the same year, but such has been the case this season, especially during the fall months, when there is a shortage reported of 29 per cent. less than a normal fall make.

As far as butter is concerned, a fairly satisfactory year has been reported, except from point of price, when a decline is reported of $1.30 per box of 56 pounds. When we consider the fact that England imports about $90,000,000 worth of butter yearly, it should show Canadian dairymen what an opportunity we have to develop along this line, for we are only shipping, at the present time, a little over six million dollars' worth.

Let New Brunswick dairymen take their proper position in this movement, and thereby build up a profitable business.

CHEESE FACTORIES.

It has been deemed advisable to continue the publication of the approximate cost of the equipment of cheese and butter factories. The cost of a suitable building for a cheese factory, 25x30 feet, and suitable to accommodate the milk of three hundred cows, would be in the vicinity of $450. It should be centrally located, easily drained, and have a good supply of cold spring water.

EQUIPMENT.

1 6 h. p. Upright Boiler (with large fire box),	$125 00
2 5,000 lb. Milk Vats (22 gauge tin),	90 00
1 Curd Sink (15 feet long),	15 00
1 Gang Press and 12 Hoops (14 in. in diameter),	75 00
1 24 Bottle Facile Babcock Milk Tester, complete,	26 00
1 Double Beam Platform Scale, 600 lbs. capacity,	20 00
1 Counter Scale, 240 lbs. capacity,	7 00
1 Weighing Can, with Gate, capacity 600 lbs.,	10 00
1 Set Curd Knives,	8 50
1 Curd Mill (Harris or Gosselin patent), $8 00 to	14 00
1 Curd Pail (flat sides),	75
3 Common Pails (tin),	90
1 Curd Scoop,	50
3 Vat Brushes,	1 25
2 Water Barrels,	2 00
Piping, valves, etc.,	6 00
	$401 90

To this must be added freight charges from point of shipment.

BILL OF STOCK FOR CHEESE FACTORIES.

Sills.—Four sills (spruce), 26 ft. x 8 ins. x 8 ins.—splice. Two sills (spruce), 30 ft. x 8 ins. x 8 ins.—end.

One cross timber, 30 ft. x 6 ins. x 8 ins.

Two carrying timbers, 26 ft. x6 ins. x 8 ins.—centre splice.

First floor joists.—Sixty first floor joists, 15 ft. 6 ins. x2 ins. x8 ins. 9 202 centre.

Second floor joists.—Thirty second floor joists, 30 ft. 0 ins. x 2 ins. x6 ins.—24 in. centre.

Rafters.—Sixty rafters, 23 ft. 0 ins. x 2 ins x 6 ins.—24 in. centre.

Collar beams.—Thirty collar beams, 15 ft. 0 ins. x 1 in. x 6 ins.

Posts.—Four corner posts, 11 ft. 0 ins. x 4 ins. x 6 ins.

Studs.—Sixty studs (sized), 11 ft. 0 ins. x 2 ins. x 4 ins. Twelve studs (sized), 11 ft. 0 ins. x 2 ins. x 4 ins.

Six hundred lineal feet, 2 ins. x 4 ins.—ends.

Plates.—Two hundred and twenty lineal feet, 2 ins. x 4 ins.—double plates.

Boards.—Seven M hemlock boards.

Flooring.—Seventeen hundred feet spruce flooring.

Sheathing.—Four M feet net spruce sheathing (make allowance for waste).

Shingles.—Twenty-two M 1st clear cedar shingles, laid 4 1-2 ins. Sixteen M 2nd clear cedar shingles, laid 5 1-2 ins.

Eight hundred square yds. paper.

Fifty-four feet pine saddle boards (lineal), 4 1-2 ins.

Fifty-four feet pine saddle boards (lineal), 5 1-2 ins.

Four corner boards, 12 ft. 6 ins. x 5 1-2 ins.

Four corner boards, 12 ft. 6 ins. x 6 1-2 ins.

Three hundred and fifty superficial feet feet plancher.

Two hundred and twenty-five (lineal) feet pine facia, 6 ins.

Two hundred and fifty (lineal) feet pine shingle facia, 4 ins.

One door, and door frame jambs, 5 3-4 ft.; door, 3 ft. x 7 ft. x 1 3-4 ins.

Seven window frame and sashes jambs, 5 3-4 ft. Plain casings, 1 1-4 ins. head with levelled cap; sashes, 4 lights, 15 ins. x 30 ins.

Twelve posts, for shelving, 10 ft. 6 ins. x 5 ins. x 5 ins.

Sixty crass supports, for shelves, 3 ft. 0 ins. x 2 ins. x 4 ins.

Thirty-six shelves, each 22 ft. 0 ins. x 1 1-2 ins. x 15 ins.

Seventy-five superficial feet 1 in. x 3 in. strapping, for two rows bridging.

Five hundred and fifty bricks (8 brick flue).

Four sheets, 10 ins. x 14 ins.—tin.

One piece sheet lead, 8 ins. x 3 ft. 0 ins.

Thirty cedar posts, at least 4 ft. 6 ins. in the earth.

If 1 1-2 spruce matched flooring can be procured, it should be used in the making room instead of the double floor, in which case 800 feet can be deducted from the amount previously named, and 700 feet net of the 1 1-2 in. used instead.

CREAMERY.

The size and plan of building depends largely upon the site, and the following is the necessary outfit to equip a creamery with a capacity suitable for three hundred cows:—

EQUIPMENT.

1 12 h. p. Boiler (horizontal),	$145 00
1 7 h. p. Engine,	120 00
Injector (3-4 inch),	9 00
Bricks, lime, labor for setting boiler and engine,	75 00
1 Cream Separator, capacity 2,500 to 3,000 lbs. per hour. $350 to	500 00
1 Receiving Vat, 4,000 lbs.,	40 00
1 Cream Vat, 1,000 lbs.,	35 00
1 Churn and Butter Worker combined (Success or Simplex pattern),	180 00
1 Set of Scales, double beam, capacity 600 lbs.,	20 00
1 Set Counter Scales, capacity 240 lbs.,	6 00
1 24 Bottle Facile Babcock Milk Tester (steam),	26 00
5 doz. Composite Test Bottles,	6 00
Shaftings, pulleys, belting, valves, fittings, etc.,	100 00
Common Tin Pails,	1 00
2 Cream Pails (heavy),	1 00
1 2 lb. Flat Butter Print,	2 50
3 Vat Brushes,	1 20
1 Sink,	1 50
3 Dippers,	1 00
1 Cream Stirrer,	1 00
	$1,271 20

To this must be added the freight from point of shipment, and cost of installation.

SKIMMING STATION BUILDING AND EQUIPMENT.

Building, including ice house, 16x24 feet.

1 7 h. p. Boiler, with large fire box,..		$135 00
1 Cream Separator, 1,800 to 2,500 lbs. capacity per hour,..	$350 to	500 00
1 Receiving Vat, 1,000 lbs. capacity,.	$10 to	15 00
1 Tempering Vat,..		8 00
Pails, brushes, composite bottles,.		5 00
Piping and connections, valves, etc.,..		5 00
2 Barrels and Sinks,		3 00
4 Cream Cans, at $4.00,		16 00
		$687 00

FOURTH ANNUAL REPORT

OF THE

SUPERINTENDENT OF FARMERS' INSTITUTES

OF

NEW BRUNSWICK

FOR THE YEAR

1904.

To the Honorable L. P. Farris,

Commissioner for Agriculture.

I have the honor to submit herewith the Fourth Annual Report of the Superintendent of Farmer's Institutes.

THOS. A. PETERS,

Superintendent.

NEW BRUNSWICK FARMERS' INSTITUTES

REPORT OF THE SUPERINTENDENT.

Following the plan adopted last year, a two days' service was given to each Farmer's Institute, where the district was large enough to hold meetings in two different places.

Through the courtesy of Mr. F. W. Hodson, Dominion Live Stock Commissioner, we were able to secure the services of experienced Institute speakers from Ontario and Quebec. With the assistance of these gentlemen, together with local talent, we were enabled to send out speakers in each division in every way well able to discuss agriculture in all branches. Mr. F. W. Brodrick, of the Seed Division, Ottawa, also lent valuable assistance.

Unfortunately, the Dominion elections came on while the meetings were being held, and interfered somewhat with their success; yet, on the whole, the attendance and interest taken by the people was fully up to former years.

As was pointed out last year, the success of these meetings depends very largely on the local officers of the Institute. Where they are active and interested, in nearly every instance the result is a large attendance and a good interest. On the other hand, when the local officers are indifferent, the usual result is poor meetings. I would strongly urge the different Farmer's Institutes to select for secretary some man who has the advancement of agriculture at heart, and would not be afraid to spend one dollar's worth of time, until he had received two dollars' worth of pay.

The meetings to which delegates are sent from the department are called regular meetings. Meetings held by the Institute, addressed by local speakers only, are termed supplementary meetings.

Of the regular meetings, there were held during September, October, and November, of 1904, ninety-four sessions. The total number of Institute meetings held during the year was 139, attended by 5,324 persons. Numbers of letters of appreciation of the speakers, and of the valuable assistance received from them, have been received by the department.

For the purpose of these meetings, the Province was divided into three districts, two delegates being sent to each division.

In Division No. 1 the delegates were W. S. Fraser, of Bradford, Ontario, and C. F. Alward, of Havelock, Kings Co., N. B. Mr. Fraser's subjects were: "Cultivation of the Soil," "Under Draining," "Clover, its value to the Farmer," "Noxious Weeds," "Hog Raising for Market," "Management of Sheep," "Production of Beef," "Farmers' Needs," "Farm Life."

Mr. Alward's subjects were: "Summer Care of Dairy Cows," "Winter Care of Dairy Cows," "Pork Production," "Raising Calves for Dairy Purposes," "Soil Cultivation and Moisture," "Co-operative Dairying," "Seed Selection."

In Division No. 2 the delegates were W. F. Stephen, Trout River, P. Q.; F. E. Sharp, Midland, Kings Co., N. B. L. C. Daigle, Dairy Superintendent, accompanied these delegates while in Madawaska County.

Mr. Stephen's subjects were: "Soil and Soil Tillage," "The Profitable Production of Milk," "Corn and the Silo," "The Dairy Cow, How to Rear and Feed Her," "Good Roads and How to Make Them," "Keeping Farm Accounts and Records," "Stable Manure and Fertilizers," "How to Interest the Boys and Gils in Farming," "Making the Most of Farm Life."

Mr. Sharp's subjects were: "The Importance of Soil Moisture and How to Retain It," "The Importance of Good Seed in the Production of Farm Crops," "Profitable Poultry Production," "Breeding and Feeding of Swine," "Summer Care and Feeding of the Dairy Cow."

Mr. Daigle's subjects were: "Feeding and Care of Cows for Summer and Winter Dairying," "Care of Milk for Creamery and Cheese Factory," "Importance of Keeping Up the Milk Supply."

In this division, Mr. Stephen was called home after the series of meetings were about one-half completed, his place being taken by Major James Sheppard, of Queenstown, Ontario.

In Division No. 3 the delegates were: Andrew Elliott, Galt, Ontario, and F. W. Brodrick, Seed Division, Ottawa.

Mr. Elliott's subjects were: "How to Maintain Moisture and Fertility in the Soil," "The Benefits of Clover and How to get Them," "Clover Hay," "Roots Necessary to the Successful Handling of Live Stock," "Corn and Silage," "The Profits of Sheep," "The Modern Hog," "Breeding and Caring for the Dairy Cow," "Principles of Stock Breeding," "The Farmer and Pure Seeds," "Concrete," "Our Duty."

Mr. Brodrick's subjects were: "The Importance of Good Seed in the Improvement of Farm Crops," "The Advantages of Suitable Rotation in Farm Crops," "The Value of Nitrogen as a Plant Food, How it may be Acquired."

In the following pages will be found reports of local Farmer's Institutes, list of officers, and extracts from some of the addresses given at the different Institute meetings.

FARMERS' INSTITUTE OFFICERS FOR 1905.

ALBERT.

Elgin, No. 56.—President, Robt. A. Smith, Elgin; Vice-Pres., T. R. Constantine, Elgin; Sec.-Treas., Geo. M. Killam, Elgin.

Harvey and Alma, No. 57.—President, Joseph Keiver, Upper New Horton; Sec.-Treas., Edgar Cannon, New Horton.

Hopewell and Hillsborough, No. 58.—President, Albert S. Mitten, Hopewell Hill; Vice-Pres., Howard Steeves, Memel; Sec.-Treas., Geo. M. Russell, Hopewell.

CARLETON.

Richmond, No. 40.—President, M. J. Green, Green Road; Vice-Pres., J. Y. Fleming, Debec; Sec.-Treas., W. E. Fleming, Debec.

Woodstock and Northampton, No. 41.—President, Judson Briggs, Lindsay; Sec.-Treas., Chas. L. Smith, Woodstock.

Wakefield, No. 43.—President, Hamilton Emery, Jacksonville; Vice-Pres., John Harper, Jacksonville; Sec.-Treas., Jas Good, Jacksonville.

Wilmot, Wicklow, and Kent, No. 44.—President, W. J. Owens, Tracy Mills; Vice-Pres., Geo. J. Cronkite, Centreville; Sec.-Treas., H. T. Scholey, Centreville.

Aberdeen, No. 45.—President, G. B. Reid, Glassville; Vice-Pres., John McIntosh, Glassville; Sec.-Treas., Alex. Scott, Glassville.

Middle Simonds, No. 83.—President, W. C. Rideout, Simonds; Vice-Pres., Aaron Shaw, Simonds; Sec.-Treas., W. N. Raymond, Simonds.

Lindsay.—President, Thos. Strong, Lindsay; Vice-Pres., Wm. Lindsay, Lindsay; Sec.-Treas., G. A. Thomas, Lindsay.

CHARLOTTE.

Pennfield, No. 26. — President, A. C. Pool, Pennfield Centre; Vice-Pres., J. J. Justason, Pennfield Centre; Sec.-Treas., E. C. Justason, Pennfield Centre.

St. Patrick, No. 27.—President, Jas. McCullough, Bocabec; Vice-Pres., Samuel Erskine, Bocabec; Sec.-Treas., Jas. McMillan, Bocabec.

St. Andrews and St. Croix—President, R. Richardson, Waweig; Vice-Pres., C. B. Lawrence, Bay Side; Secretary, Rev. Hunter Boyd, Waweig; Treasurer, Thos. Faloon, Waweig.

GLOUCESTER.

Bathurst, No. 3.—President, P. J. Power, North Teteagouche; Vice-Pres., Jno. J. Miller, Bathurst; Sec.-Treas., T. Edwin Carter, Bathurst.

New Bandon, No. 4. — President, N. R. Richey, New Bandon; Vice-Pres., Robert Hickson, Stonehaven; Sec.-Treas., Horace Hornbrook, New Bandon.

Grand Anse, No. 5.—President, J. D. Foley, Pokeshaw; Vice-Pres., Gustavus Dumas, Grand Anse; Sec.-Treas., Stanislas Dumas, Grand Anse.

Caraquet, No. 68.—President, Rev. J. T. Allard, Caraquet; Vice-Pres., C. C. Power, Caraquet; Sec.-Treas., J. E. Lanteigne, Caraquet.

Beresford, No. 73.—President, A. D. Doucet, Beresford; Vice-Pres., Jean B. Cormier, Elmtree; Sec.-Treas., B. H. Cormier, Elmtree.

KENT.

St. Louis and St. Ignace, No. 12.—President, Francis O. Richard, McLeod's Mills; Vice-Pres., H. Barrieau, St. Louis; Sec.-Treas., M. J. Porier, St. Louis.

Richibucto, No. 13. — President, Dr. I. W. Doherty, Rexton; Vice-Pres., G. W. Clark, Rexton; Sec.-Treas., John Jardine, Jardineville.

Wellington, St. Marys, and Dundas, No. 66. — President, John McKee, Little River; Vice-Pres., Lewis Bourke, Buctouche; Sec.-Treas., Dr. David D. Landry, Buctouche.

KINGS.

Sussex and Studholm, No. 21. — President, H. M. Campbell, Apohaqui; Vice-Pres., S. C. McCully, Sussex; Sec.-Treas., C. W. Stockton, Sussex.

Hampton and Norton, No. 22. — President, C. E. Dixon, Hampton; Vice-Pres., J. A. Floyd, Central Norton; Sec.-Treas., Jas. E. Hoyt, Hampton.

Kingston, No. 23. — President, H. V. Dickson, Jubilee; Vice-Pres., L. S. Crawford, Kingston; Sec.-Treas., O. W. Wetmore, Clifton.

Westfield and Petersville, No. 55.—President, F. W. C. Nase, Nerepis Station; Vice-Pres., J. B. Barton, Armstrong Cor.; Sec.-Treas., D. M. Hamm, Grand Bay.

Upham and Hammond, No. 69. — President, Wm. Jamieson, Hillsdale; Sec.-Treas., Jas. Payne, Hillsdale.

Springfield, No. 74.—President, H. N. Raymond, Belleisle Ck; Vice-Pres., G. A. Myles, Belleisle Creek; Sec.-Treas., N. W. Menzies, Midland.

MADAWASKA.

St. Basil, No. 50.—President, Dolphis Daigle, St. Basil; Vice-Pres., Paul Clavert, St. Basil; Sec.-Treas., D. J. Daigle, St. Basil.

St. Hilaire, No. 65. — President, Hector D. Daigle, Michaud; Vice-Pres., Z. Daigle, Michaud; Sec.-Treas., Honoie Cyr, St. Hilaire.

Madawaska, No. 77. — President, J. Augure Bernier, Edmundston; Sec.-Treas., J. B. Michaud, Edmundston.

St. Francis, No. 84.—President, Antoine Cyr, St. Francis; Sec.-Treas., Joseph Albert, St. Francis.

NORTHUMBERLAND.

Derby, No. 8.—President, John Betts, Millerton; Vice-Pres., E. J. Parker, Derby; Sec.-Treas., Geo. F. Crocker, Millerton.

Chatham and Nelson, No. 9.—President, Geo. J. Dickson, Chatham; Sec.-Treas., Geo. E. Fisher, Chatham.

Rogersville, No. 62. — President, Rev. M. F. Richard, Rogersville; Vice-Pres., J. D. Buckley, Rogersville; Sec.-Treas., Fidele Richard, Rogersville.

Blissfield, No. 71. — President, Edward Mersereau, Blissfield; Vice-Pres., Wm. Donald, Upp. Blackville; Sec.-Treas., Ronald Hurley, Gilks.

Blackville, No. 75.—President, B. N. T. Underhill, Blackville; Sec.-Treas., R. M. Grindley, Blackville.

Doaktown, No. 81.—President, H. Swim, Doaktown; Sec.-Treas., Wm. Murray, Doaktown.

QUEENS.

Cambridge, No. 29.—President, Chas. L. Slipp, Mouth of Jemseg; Vice-Pres., Alfred E. McAlpine, Lower Cambridge; Sec.-Treas., John W Foshay, Mouth of Jemseg.

Gagetown and Hampstead, No. 70.—President, S. L. Peters, Queenstown; Vice-Pres., Jas. A. Stewart, Gagetown; Sec.-Treas., F. C. Ebbett, Gagetown.

RESTIGOUCHE.

Addington and Eldon, No. 1. — President, Wm. W. Doherty, Campbellton; Vice-Pres., Archibald McKenzie, Campbellton; Sec.-Treas., Jos. H. Taylor, Campbellton.

Dalhousie, No. 2. — President, John Barberie, Dalhousie; Vice-Pres., John McNish, Point Le Nim; Sec.-Treas., James E. Stewart, Dalhousie.

Durham, No. 79.—President, E. McMillan, Black Point; Vice-Pres., T. Hayes, Nashe's Creek; Sec.-Treas., Samuel Laughlin, Black Point.

Balmoral, No. 80. — President, Rev. John Wheteen, Balmoral; Vice-Pres., Edward Bernard, Balmoral; Secretary, D. A. Arseneau, Balmoral; Treasurer, Hon. C. H. LaBillois, Dalhousie.

ST. JOHN.

St. John, No. 51.—President, Dr. T. Fred. Johnstone, St. John; Vice-Pres., Sam'l Creighton, Silver Falls; Sec.-Treas., R. R. Patchell, St. John.

Simonds and Rothesay, No. 52. — President, Wm. T. Boyle, Golden Grove; Vice-Pres., Jos. W. Stackhouse, Upper Loch Lomond; Sec.-Treas., Alex. F. Johnstone, Upper Loch Lomond.

St. Martins, No. 54. — President, James Rourke, St. Martins; Vice-Pres., H. E. Gilmore, St. Martins; Sec.-Treas., Michael Kelly, St. Martins.

SUNBURY.

Blissville and Gladstone, No. 61. — President, H. H. Smith, Hoyt; Vice-Pres., P. Nason, Fredericton Junction; Sec.-Treas., J. S. Hayward, Central Blissville.

VICTORIA.

Andover, No. 46.—President, James E. Porter, Andover; Sec.-Treas., F. E. Henderson, Andover.

New Denmark, No. 48.—President, John Brinkman, Salmonhurst; Vice-Pres., A. P. Hansen, Salmonhurst; Sec.-Treas., A. J. Jensen, Salmonhurst.

Kincardine, No. 60. — President, Wm. McPhail, Bon Accord; Vice.-Pres., Andrew Davidson, Kincardine; Sec.-Treas., Alex. Philip, Upper Kintore.

Perth, No. 76. — President, Alex. Walker, Tilley; Sec.-Treas., J. F. Tweeddale, Arthurette.

Grand Falls and Drummond, No. 78.—President, Walter Warnock, Grand Falls; Vice-Pres., Wm. Sweezey, Grand Falls; Sec.-Treas, Jas. Watson, Grand Falls.

WESTMORLAND.

Shediac, No. 15.—President, J. G. Wilbur, Shediac; Vice-Pres., G. L. Welling, Shediac; Sec.-Treas., Fred. Ingils, Shediac.

Botsford, No. 16.—President, Wm. Prescott, Baie Verte; Vice-Pres., Jas. Berry, Melrose; Sec.-Treas., J. R. Taylor, Little Shemogue.

Sackville and Westmorland, No. 17.—President, S. Edgar Dixon, Sackville; Vice-Pres., Frank Trueman, Point De Bute; Sec.-Treas., J. T. Carter, Sackville.

Dorchester, No. 18. — President, Jos. R. Taylor, Taylor Village; Vice-Pres., Dr. E. T. Gaudet, St. Joseph; Sec.-Treas., Patrick T. Legere, Memramcook.

Petitcodiac and Havelock, No. 20.—President, Thos. G. Perry, Havelock; Vice-Pres., John A. Hughes, Petitcodiac; Sec.-Treas., Harry Douglas, Petitcodiac.

Moncton and Fox Creek, No. 72.—President, Edwin T. Charters, Chartersville; Sec.-Treas., D. D. Legere, St. Anselme.

Barachois, No. 82. — President, Thos. L. Gallant, Barachois; Sec.-Treas., Mathais Arseneau, Upper Abougagan.

YORK.

Fredericton, No. 34.—President, John A. Campbell, M.P.P., Spring Hill; Vice-Pres., F. S. Hilyard, Fredericton; Sec.-Treas., Thos. A. Peters, Fredericton.

Stanley, No. 35.—President, M. W. Crotty, Stanley; Vice-Pres., Dr. Sterling, Stanley; Sec.-Treas., D. J. Griffiths, Stanley.

Douglas and Bright, No. 36.—President, A. E. Kilburn, Mactaquack; Vice-Pres., Geo. J. Colter, Mouth of Keswick; Sec.-Treas., Chas. Moore, Scotch Lake.

Southampton and Queensbury, No. 37.— President, Peter Johnson, Millville; Sec.-Treas., S. A. Jones, Millville.

Prince William, No. 38. — President, E. D. Estabrooks, Lower Prince William; Vice-Pres., Josiah Lawrence, Lower Prince William; Sec.-Treas., J. W. Smith, Lower Prince William.

Manners-Sutton, No. 39. — President, Robt. Little, Harvey Station; Vice-Pres., Jas. Thompson, Harvey Station; Sec.-Treas., John T. Craig, Harvey Station.

Middle Southampton, No. 67.—President, F. R. Brooks, Grand View; Sec.-Treas., F. C. Brown, Middle Southampton.

North Lake.—President, R. Wesley Cropley, Fosterville; Vice-Pres., C. H. Gould, Fosterville; Sec.-Treas., Sam'l Foster, Fosterville.

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REPORTS OF LOCAL FARMERS' INSTITUTES FOR THE YEAR ENDING NOVEMBER 30TH, 1904.

INSTITUTE DISTRICT.			Membership ending Nov. 30, 1905.	Number of Meetings Held.	Total Attendance.	Number of Addresses Delivered.	RECEIPTS.				EXPENDITURE.						
County.	Number.	Name.					Balance from last Acct.	Members' Fees and Donations.	Provincial Grants.	Total Receipts.	Expenses for Meetings.	Secretaries' Salary, etc.	Ag. Literature for Members.	Miscellan'ous	Total Expenditure.	Balance on Hand.	Total.
							$ c.	$ c.	$ c	$ c.	$ c	$ c	$ c.	$ c.	$ c.	$ c	$ c
Albert	56	Elgin	50	2	65	4	41 59	12 50	15 00	69 09	3 35	6 00	....	1 72	11 07	58 02	69 09
"	57	Harvey and Alma	50	...	.	..	....	....	....	....	....	....	....	....	....	....	...
"	58	Hopewell and Hillsborough	50	2	105	4	5 93	12 50	15 00	33 43	9 00	10 00	....	12 50	31 50	1 93	33 43
Carleton	40	Richmond	50	1	26	1	17 76	12 50	15 00	45 26	2 60	10 00	....	25 00	37 60	7 66	45 26
"	41	Woodstock and Northampton	154	..	...	...	....	....	....	....	....	....	....	....	....	....	....
"	44	Wilmot, Wicklow and Kent	103	2	32	3	2 45	25 00	15 00	42 45	7 00	10 00	....	25 00	42 00	45	42 45
"	45	Aberdeen	60	1	60	3	36 25	....	15 00	51 25	5 00	10 00	....	2 00	17 00	34 25	51 25
"	83	Simonds	30	1	25	1	....	....	15 00	....	....	....	....	....	....	....	....
"	..	Lindsay	44	7	361	53	33 88	14 45	15 00	63 33	2 50	....	....	20 50	23 00	40 33	63 33
Charlotte	26	Pennfield	60	1	40	3	8 90	15 00	15 00	38 90	8 50	10 50	11 00	....	30 00	8 90	38 90
"	27	St. Patrick	....	..	....	..	...	....	....	....	....	....	..	....	....	....	....
"	..	St. Andrews and St. Croix	50	21	233	19	37 00	18 93	15 00	70 93	18 21	....	31 98	4 23	54 42	16 51	70 93
Gloucester	3	Bathurst	73	4	87	5	70 04	18 25	15 00	103 29	5 52	10 00	....	62 75	78 27	25 02	103 29
"	4	New Bandon	50	2	60	4	49 75	12 50	15 00	77 25	4 00	....	....	1 00	5 00	72 25	77 25
"	5	Grand Anse	....	...	....	...	....	....	....	....	....	....	....	....	....	....	....
"	68	Caraquet	100	...	....	..	....	....	....	....	....	....	....	....	....	....	....
"	73	Beresford	58	2	220	4	19 25	16 00	15 00	50 25	5 50	5 00	....	35 20	45 70	4 55	50 25
Kent	12	St. Lewis and St. Ignace	83	2	105	6	2 65	20 75	15 00	38 40	4 09	15 00	....	18 00	37 09	1 31	38 40
"	13	Richibucto	67	2	50	7	20 25	16 75	15 00	52 00	15 50	10 00	....	6 25	31 75	20 25	52 00
"	66	Wellington, St. Mary's and Dundas	125	1	30	2	28 26	....	15 00	43 26	....	....	....	....	....	43 26	43 26
Kings,	21	Sussex and Studholm	114	4	465	12	116 22	....	65 00	181 26	15 30	20 00	17 00	114 20	166 50	14 72	181 22
"	22	Hampton and Norton	90	2	65	6	46 96	22 50	15 00	84 46	9 38	10 00	8 30	35 00	62 68	21 78	84 46
"	23	Kingston	146	4	635	13	45 69	36 50	15 00	97 19	14 99	10 00	19 35	8 65	52 99	44 20	97 19
"	55	Westfield and Petersville	50	2	72	6	20 43	12 50	15 00	47 93	2 50	10 00	12 65	1 21	26 36	21 57	47 93
"	69	Upham and Hammond	50	2	95	5	60 69	12 50	15 00	88 19	1 47	10 00	...	....	11 47	76 72	88 19
"	74	Springfield	50	1	40	2	30 26	12 50	15 00	57 76	1 80	10 00	10 80	....	22 60	35 16	57 76
Madawaska	50	St. Basil	55	1	90	3	36 65	12 00	15 00	63 65	3 50	10 00	....	50	14 00	49 65	63 65
"	65	St. Hilaire	75	1	50	2	70 02	....	15 00	85 02	....	2 50	....	60 00	62 50	22 52	85 02

Madawaska	77	**Madawaska**	69	1	29	3	......	......	15 00	15 00	1 40	.....	.....	......	1 40	13 60	15 00
"	84	St. Francis	100	1	43	3	......	....	15 00	15 00	.....	.....	.....	.....	....	.	......
Northumberland.	8	Derby	100	2	114	4	20 17	25 00	15 00	60 17	8 00	15 00	5 00	30 00	58 00	2 17	60 17
"	9	Chatham and Nelson	135	4	170	10	29 60	33 75	15 00	78 35	39 25	10 00	......	......	49 25	29 10	78 35
"	62	Rogersville	52	2	37	2	....	.....	15 00	.....	.....	.....	.....	.....	.....	.....	......
"	71	Blissfield	50	5	77	5	45 85	12 50	15 00	73 35	1 85	10 00	......	5 75	17 60	55 75	73 35
"	75	Blackville	60	3	130	5	28 75	13 75	15 00	57 50	9 35	15 00	.....	......	24 35	33 15	57 50
"	81	Doaktown	50	1	50	2	17 65	14 00	15 00	46 65	3 35	10 00	1 50	15 00	29 85	16 80	46 65
Queens	29	Cambridge	58	4	221	12	14 40	14 50	15 00	43 90	4 75	15 00	3 40	10 03	33 18	10 72	43 90
"	70	Gagetown and Hampstead....	....	...	....	...	......	......	....		.....	.....	.....	......	.....	.....	......
Restigouche.....	1	Addington and Eldon........	40	1	30	2	38 34	10 00	15 00	63 34	12 75	15 00	....	1 50	29 25	34 09	63 34
"	2	Dalhousie	35	1	60	2	15 28	8 75	15 00	39 03	1 87	12 18	12 60	25	26 90	12 13	39 03
"	79	Durham	60	3	55	4	24 25	.....	15 00	39 25	17 00	.....	.....	5 00	22 00	17 25	39 25
"	80	Balmoral	61	1	50	2	...	.....	15 00	......	.....	.....	.....	.....	......	......	......
St. John........	51	St. John........	51	2	85	6	13 15	12 75	15 00	40 90	15 50	10 00	......	7 00	32 50	8 40	40 90
"	52	Simonds and Rothesay	44	1	25	2	26 65	11 00	15 00	52 65	1 25	10 00	15 00	....	26 25	26 40	52 65
"	54	St. Martins........	25	1	32	2	31 00	6 25	15 00	52 25	5 00	10 00	......	......	15 00	37 25	52 25
Sunbury.......	61	Blissville and Gladstone.....	61	4	51	4	23 50	15 00	15 00	53 50	2 80	10 00	......	32 70	45 50	8 00	53 50
Victoria	46	Andover........	59	2	65	5	11 33	14 75	15 00	41 08	1 50	10 00	8 40	1 00	20 90	20 18	41 08
"	48	New Denmark	80	2	50	3	34 39	20 00	15 00	69 39	5 65	10 00	80	42 00	58 45	10 94	69 39
"	60	Kincardine........	54	3	70	8	18 56	13 50	15 00	47 06	1 35	10 00	......	15 35	26 70	20 36	46 07
"	76	Perth	71	1	40	2	......	.....	15 00		..	.....	.....	....	.....	.....	......
"	78	Grand Falls and Drummond ..	63	2	55	3	35 75	13 00	15 00	63 75	6 00	5 00	84	13 25	25 09	38 66	63 75
Westmorland....	15	Shediac........	121	1	25	2	12 25	....	15 00	27 25	1 50	10 00	....	.....	11 50	15 75	27 25
"	16	Botsford	169	2	74	4	32 99	42 25	15 00	90 24	3 25	15 00	64 50	90	83 65	6 59	90 24
"	17	Sackville and Westmorland .	99	3	55	4	64 80	24 75	15 00	104 55	3 05	10 00	......	15 50	28 55	76 00	104 55
"	18	Dorchester	90	2	75	4	......	.....	15 00	.....	.. ..	.....	......	......	......	.. .	......
"	20	Petitcodiac and Havelock ..	50	2	58	5	33 75	12 50	15 00	61 25	5 75	5 00	18 00	65	29 40	31 85	61 25
"	72	Moncton and Fox Creek......	800	2	100	4	......	.....	15 00	.....	.....	.....	......	.....	......	.. ..	......
"	82	Barachois	102	1	60	2	.. ..	.....	15 00	......	....	.....	......	.....	......	......	......
York	34	Fredericton	211	2	82	5	..	.. ..	15 00	15 00	13 50	.....	.....	.....	13 50	1 50	15 00
"	35	Stanley........	52	2	133	4	13 65	13 00	15 00	41 65	4 35	10 00	....	13 65	28 00	13 65	41 65
"	36	Douglas and Bright........	31	2	40	4	36 00	7 75	15 00	58 75	1 75	10 00	......	.....	11 75	47 00	58 75
"	37	Southampton and Queensbury.	96	.	....	...	57 65	24 00	.....	81 65	.....	10 00	......	......	10 00	71 65	81 65
"	38	Prince William........	36	1	20	2	40 90	.....	15 00	55 90	1 70	10 00	....	.....	11 70	44 20	55 90
"	39	Manners Sutton	84	2	52	4	76 08	21 00	15 00	112 08	1 50	15 00	2 40	......	19 40	92 68	112 08
"	67	Middle Southampton	....	...	....	...	......	......	......	......	......	......	......	......	......	......	......
"	..	North Lake........	....	..	....	...	......	......	......	......	......	......	......	......	......	......	......
			2502	139	5324	309											

NOTE.—Where blanks occur, full returns have not been received.

Extracts from Speeches Delivered at Farmers' Institute Meetings.

MAKING THE MOST OF FARM LIFE.

BY W. F. STEPHEN, TROUT RIVER, QUE.

When I consider that two-thirds of the people of Canada are living on farms, the question often arises in my mind, Are the farmers of Canada making the most of their conditions? In this age of competition, especially in business life, when everything is run at high pressure, are we farmers keeping pace with the times? Are we making the most of our opportunities? I fear many of us are not. We are told, "that the time is no longer, when anyone can farm successfully." Farming today requires thought, the studying of business principles, and putting them into practice, method, and application. All this gives chance for development, and in order to hold our own in the battle of life, or we must soon go under. We must study the questions that come before us intelligently, and so get a grasp of them, that will be helpful to us in our every day life and occupation. The object of life should be to accomplish something. Life is a complete problem, so much so that no man can live wholly to himself. Possibly the farmer can better than any other class, because he is a producer as well as a manufacturer, but it is not the natural order of things that he should live to himself. True, development requires contact with other people and forces than those that immediately surround us. The tiller of the soil is the greatest benefactor to mankind, because he gives him his sustenance—his daily food, which is the first essential to keep life. He produces the raw material to supply the world's temporary need. He harnesses the forces of nature, and makes them yield at his bidding, and give " Seed to the sower, and bread to the eater." And to do this successfully, requires, as I said before, thought, method, and application. Is this to mean a life of drudgery, or a life of noble effort? It may mean either, just as we make it. Honest labor is never to be despised; drudgery is, and should be kept out of every farm home. It is true drudgery, that, in a measure, drives out boys and girls away from the farm, as well as our laborers. The system that many of our farmers have had, of working from 14 to 16 hours per day, is nothing short of white slavery. By systematizing our work, by co-operation among our fellow farmers, by using the best labor-saving machinery and appliances, we may overcome this to a great extent. Thus will we be better able to hold our boys and girls, as well as our laborers, with us. Although, there is one fact in this regard that we must not overlook, that as long as we have free grants of land in our Northwest, we farmers of Eastern Canada will have to be satisfied with a shortage of labor, as our brightest and best boys and laborers are going to carve out homes for themselves on the prairies or ranches of our fertile Northwest. To offset this we may import some of the agricultural labor from the British Isles or Europe. I had the pleasure of being in the city of Glasgow, Scotland, last 30th of May, which was feeing day. And in going among the very many farm laborers, who offered their services on that occasion, and in conversing with them, I found many of them ready and willing to come to this beautiful Canada. These make the best farm laborers we can secure, as also does the experienced Swede, Dane, or German.

There is another factor we farmers of Eastern Canada must not lose sight of, viz., as long as free land grants are given in our great Northwest, and are being taken up and brought under the plow, we, with our farms worth from $30 to $80 per acre, with considerable capital invested in stock and implements, we must compete with these Western farmers, who, as time goes on, will get cheaper and better facilities for transportation; will be even greater competitors in all lines of farm produce. But just as the farmers of the Old Land have had this same thing cast upon them, and have met it by making their soil more productive, so must we, and aim and study to produce only those products which gives the greatest maximum profit at a minimum cost. In order to do this we must study our soil conditions; find out what crops are best suited for our soils. When they are poor, give them treatment that will make them rich and productive. This part of farming has been neglected to a very great extent in the past. Many a splendid farm has been robbed of its soil fertility, and then handed down to a son (with possibly an encumbrance upon it to pay off heirs), and we wonder why the son does not succeed. Why? Because he has an impoverished farm; because he employs the same methods as his father did before him. He forgets, or possibly does not know that plants require food, or perchance there may be considerable plant food left in the soil, only the mechanical and physical conditions of the soil may not be good, and the plant cannot assimilate the necessary food for successful growth. Pardon a personal allusion. I went on to just such a farm 14 years ago, which did not then give me more than one and a half tons of hay, or 30 bushels of oats per acre. Last year I raised three tons hay, and 55 bushels of oats per acre, and kept twice the number of cows, and they gave me a higher average per cow. I doubled its capacity during that time by adopting these principles I have been speaking about, so that I increased soil fertility by aiming to produce large crops and feeding all on the farm, and sometimes purchasing concentrated foods as well. Increase soil fertility, and fertility means prosperity, by calling to our use the forces of nature to assist us in our work. The soil is the raw material out of which we produce all the food necessary for the subsistence of our fellow men. The *free* natural agencies we call to our assistance is sunlight, to warm our soil, etc.; air, without which our plants and rootlets will not thrive; water, which makes soluble the plant food of the soil, and enables the little rootlets of plants to drink in their food; and it is the wise farmer who observes these natural agencies, and so prepares his soil and makes these agencies helpful in the production of his crops. Maintain and increase soil fertility by the conserving of all our barnyard manures, by the plowing down of green crop for manure, especially when our soils lack humus. Maintain soil fertility, by the growing of clover. I know of no more valuable plant to the Canadian farmer than the clover family, either as a good, nutritious, and palatable food for all kinds of farm stock, or as a fertilizer for our soils, taking its substance, such as lime, potash, phosphoric acid, etc., from deep down in the soil; its nitrogen from the air, and storing it in the soil for the benefit of future crops. Breed good stock, as it costs more to breed and raise scrub stock, and the profit is very largely in favor of the good stock. It is important also to select good seed, and aim to improve it by adopting the latest methods of seed growing, thereby increasing the vitality and productive powers of the seeds we sow. Study conditions of soil, stock, and seeds; also condition of markets suited to our products. Keep out the weeds, and get them out when they have got a start. No farmer can expect to succeed when a large percentage of his crop consists of weeds. Avoid slip-shod methods. Work to a plan. Keep records of your herds; also a diary of farm happenings, and a simple method of farm, household, and personal accounts. Aim to have a neatness around the farm steading This includes an asthetic and neat appearance around not only the home, but all over the farm, and the general lay-out of the farm, buildings, and residence, so as to not only give the steading an attractive appearance, but facilitate the work in and about the farm. The farm houses should have all modern conveniences—cisterns, taps of hot and cold water, closets, and sewerage, if possible. This not only adds to the convenience, but adds to the value of the farm, as well as comfort in the home, so as to make life's burden lighter, and brighter, and pleasanter for the noble wives and daughters of our farmers.

Cultivate the social and intellectual side of life, in this age of so many inexpensive but valuable periodicals and good literature, bearing not only on farm topics, but on other subjects as well, by a well-conducted debating club, in a rural community, and, if possible, by travel. All these fit one better for our life work. And I would say to my young fellow farmers, with their advantages, we should be better informed men than our fathers; better fitted to fill the positions that will naturally be thrust upon us as citizens of a great heritage in this noble Canada of ours. If there is an object of pity, it is a man or women called to a position which they are incapable of filling. Therefore, let us not only be proficient in our calling as agriculturists, but well-fitted also to take our place in the higher walks of life, and fill them creditably and faithfully. Have a standard of excellence, and aim to reach it, and live up to it. Remember the old Chinese proverb, "Aim at the sun, and although you may not reach it, your arrow will fly higher than if aimed at an object on a level with yourself."

SEED SELECTION.

BY F. W. BRODRICK, MARITIME SUPT. OF SEED DIVISION, OTTAWA.

The important bearing which the seed question has on our agricultural advancement is fast being realized by those interested in agricultural work. As a result, rapid strides are being taken to improve the condition of the seed which is being used for the various grain and farm crops.

It has been very clearly demonstrated that in order to obtain good crops, it is very essential that good seed be used. The old law that "like begets like" is very applicable in respect to the seed of farm crops. The characteristics of the mother plant are as truly transmitted through the seed to the young plant as they are from parents to young in the case of animals. How important it is, then, if we wish to secure large crops, that we exercise great care in the selection of the seed.

Some very interesting results have been obtained from the work of systematic seed selection. The seed of various farm crops has been carefully selected from year to year, for the purpose of developing some desirable characteristics in that crop. In France, a great deal of work has been done in relation to the sugar beet industry of that country. The object of the work there was to increase, if possible, the sugar producing power of the beets.

The sugar beet, of course, is a biennial. The large root, which is produced from the seed the first year, is held over during the winter, and planted the following year to produce seed. A system of selection was followed up, in which only those beets which were found to test a high percentage of sugar were selected and held for the production of seed. The result of years of careful selection along these lines was practically a doubling of the percentage of sugar which the beets contained. This increase in the amount of sugar produced, of course, means an annual increase of millions of dollars in the revenue of that country. Year by year this selection is carried on to keep up the high sugar-producing power of the beets.

Work along similar lines, more particularly with the grain crops, is being carried on in Canada. On numerous farms throughout the Dominion, small plots of good fertile land are being set aside on which to raise selected grain for seeding purposes. The object of the work here is to fix desirable characteristics, such as vigor and early maturity in our farm crops, and also to improve their yielding abilities.

The system followed here is slightly different from that followed in France with the sugar beets. There, all the improved seed is produced on special seed farms. In the work in Canada, each individual farmer may have his own seed plot on which to raise his improved seed.

In beginning the work of seed selection, the first important point to take into consideration is the desirability of the variety which is to be selected. The variety chosen should be one that has been found to be suited to the locality. Under ordinary conditions it should be fairly vigorous, and a good yielder.

The first year, in the case of a grain crop, the work of selecting is done just before the crop is harvested. The method is to pass through the standing crop, and select the best developed heads from the largest and most vigorous plants. A few hours spent in the work of selecting at this season will furnish enough heads to supply seed for a good sized plot the following year.

The plot on which the seed is to be sown should be well drained, fertile, and in a good state of cultivation. A small quantity of the selected seed should be sown per acre. The thin sowing will induce the individual plants to " stool out " and become vigorous, and produce a large quantity of well-developed seed. A quantity of seed should be selected by hand each year from this plot for the following year's sowing. By keeping up this system of selection from year to year with a certain crop, characteristics such as vigor, productivness, etc., will tend to become fixed in that crop.

Special provisions are being made for the registration of all selected seed. Seed, which has been selected by hand for three consecutive years, will be registered as " Pure Bred Hand-selected " seed of the third year's selection, and so on for each succeeding year. Seed produced from the " Pure Bred Hand-selected " seed will be registered as " Improved Registered " seed, and that from the " Improved Registered " seed as " General Crop Registered " seed.

The results which have so far been obtained from this work of seed selection are very encouraging. A marked increase in the yield, and a decided improvement in the general vigor of the crop, could be noticed.

The work of seed selection is to be taken up and carried on in a systematic way in the Maritime Provinces, and it is to be hoped that greatly improved agricultural conditions will follow as a result of this systematic effort.

OPENING ADDRESS OF THE PRESIDENT,

WILLIAM L. M'PHAIL, KINTORE, V. CO.

This is the day of the doctrine, "Get rich quick." We know it don't apply to the farmer on these new lands of Kincardine and Kintore. There is an old text more applicable in our case, "Cast thy bread upon the waters; for thou shalt find it after many days." We know how true the last part is — Find after many days. But we know a large part of the world don't find, after many years, anything but that they have made a complete failure of life — not so much in trying to get rich quick, as in their hurry to get return for their labor. The grasping after the ready dollar. It makes farming distasteful to many having to wait so long for returns.

Another text, "Behold the husbandman waiting for the precious fruits of the earth, and hath long patience for it." Those who start farming in these parts did not go after getting rich quick, but they are after plenty of bread and meat, and a comfortable home, and are satisfied to work and scheme and look forward, often a good many years, to the fulfillment of their wishes. I tell you their chances of success, in the end, are far ahead of those who start out for the ready dollar. If there is prudence, with patience and persistency, there will be no failure. There are some things which show to the advantage of the town's folk. A young couple, going from the country to the town, come back after a year or two to spend a few weeks amongst their friends. Under holiday aspect, people seem to have lots of time, and lots of money, and our young folks, who don't always look beyond present appearances, are apt to think it is always so with town's folk, and to be discontented with their own lot by comparison; especially when told of the great entertainments, gorgeous theatres, and what not, where the city folks can spend their evenings, but taking care not to mention that they themselves could not afford to go often to such. Now, I am sure that any farmer, deserving the name, has as much money as he could spend on entertainment, and holiday making, as any ordinary workman; but it is not an easy thing for the farmer and his wife to both leave the farm for any length of time. The advantage the town's folk have over the farmer, if it be an advantage, is that they can put their whole capital—whenever they have any—into their pocket, and go rambling until it is done. The farmer can never do this. He must, perforce be more or less a man of property, and that of a kind which needs close attention. And his success will depend, in a large measure, on the attention and care he gives to it. And herein is one great advantage the farmer has over the man who works for wages — he cannot spend all he makes — his property is all the time accumulating, and in case of need, an ordinary colony farmer, from his stock and real estate, could realize from two to three thousand dollars — by taking time to make everything marketable. A young friend, a carpenter, who had been working in Boston a good many years, was home on a visit lately, and told me that he did not know of any man over forty who could find employment at his trade. He says there are so many young men crowding into every trade and profession, that men who are no longer young are replaced by them, with the remark that "The jump is out of them," and *it is* out of them.

Men are made more expert by being confined to one department of their business; and their minds, having no scope or change, during working hours, the monotony of doing the same thing over and over, for ten hours a day, year in and year out, soon grinds the life out of one.

The occupation of the farmer is one of the most varied. Besides keeping him in the open air, for the greater part of his time, it brings him into the closest intimacy with the seasons, and with nature—and I think should also with nature's God. Of course there is another side to this. His attention to the weather, and dependence on it, is often disappointing, and gives the grumbler every chance, and many take advantage of it to exercise their prerogative.

To be a successful farmer means that one must be an intelligent person. To carry on his business with just hopes of success, his attention must be directed to other objects besides the mere labor of the ground, and the rearing of vegetables. It is necessary he be a student, and have some knowledge of such sciences as geology, chemistry, botany and physiology. From all of which it may be seen that the practice of agriculture bestows health upon the body, and furnishes abundant employment for the mind. It has also a beneficial effect, in a moral point of view, as it should have no tendency to excite or encourage that spirit of cunning and artifice which often degrades the character of those engaged in some branches of commercial and manufacturing employments.

The art of the husbandman is unquestionably the most ancient of all. Adam was sent from Eden to labor or cultivate the ground. Abel was a keeper of sheep. Cain was a tiller of the ground. From the earliest accounts of the nations of the east and west, agriculture was an honored profession. As soon as our maker gave the people of Israel a land to live in, and formed them into a model or pattern for all men, they became husbandmen from the highest to the lowest. High birth and rank made in this no distinction, for agriculture was considered as the most honorable of all employments. It is for the young people to look closely at this matter, and not be deceived by holiday keepers, who are no more in their normal condition than they themselves when on a holiday excursion.

Of this I am sure, if the young people examine this matter on all sides, and through and through, they will come to the conclusion that there is not a class, to be found anywhere, who have the real independence of those who depend for their living on a well-worked farm, with a well-cared for stock upon it.

POULTRY PRODUCTION.

BY F. E. SHARP, MIDLAND, N. B.

Despite the fact that nearly every farmer has been keeping hens ever since they began farming, it is wonderful how few can tell you whether their flocks are a paying business investment or not. If paying, all well and good, only can you make them pay better? If not paying, Why? It is to both of these cases that I wish to address myself. Let me first tell you I know of no branch of farm life that—requiring so small a capital—will produce such handsome profits, and do it so quickly, as a flock of good hens. Any autumn a flock of twenty-five pullets can be secured for $7 or $8. If they have been hatched early in the month of May, they should be laying, at least, by the first of December. With care and attention, they should lay well during the winter months, when eggs are in great demand, and are bringing the highest prices.

From the ordinary farmer's point of view, there are two objects for him to consider: First, How can he produce as many eggs as possible in the winter? Second, How can he produce early chickens for the market, at the least possible cost? To secure these two objects, we require what we call utility type of fowl. By utility type, I mean some of the breeds that are good winter layers, and the chicks of which produce good blocky birds at five months of age. Such breeds as Barred Plymouth Rocks, White Wyandottes, or Buff Orpingtons, are good types of this class.

Let us consider first the winter production of eggs. We have all noticed how easy it is for our hens to lay well during the spring and summer months. Now, if we are to have the same results during the winter, we must imitate summer conditions as much as possible. We have all noticed how the hen feeds during the summer, when she first starts out in the morning picking a blade of grass here, and another there, an occasional earth worm or bug, a seed here, and another there, an occasional pebble, and drink of water, on and on, until night, when she has a crop full ready to go to roost. Now, having noticed this, how are we to imitate these conditions? We have no grass, or earth worms or bugs for our hens in the winter. We have to keep them enclosed at this season, and hence they are deprived of the exercise got during the summer. We must first have a comfortable and roomy hen house. The house should face the south, with plenty of windows admitting plenty of light and sunshine. Whatever its interior arrangements may be, it should be so arranged that the cleaning from under the roosts, feeding and watering can be done without disturbing the fowls. There are many designs of hen houses put forward by poultry fanciers, any of which can be more or less imitated by farmers, according to the number of fowls they intend keeping, and the expense they feel inclined to go to in preparing for them. Plenty of good, pure water is just as necessary for the fowls as for the dairy cows. We are told that the hen, considering her size, consumes more water than any other of our domestic animals. This is not to be wondered at, when we realize that 66 per cent. of the egg consists of water. For exercise we must have a scratching pen, the floor of which should be covered with six or eight inches of litter of some kind, such as cut straw, chaff, leaves, etc., into which whole grain is thrown, to compel them to scratch to find it. There are many methods adopted in feeding poultry, containing many good ideas. I have found there is no set rule that will apply to the poultry flock; they have to be very carefully watched, and their appetites catered to even more carefully than the dairy cow. After having tried various methods of feeding, I have about settled on the following, as giving me the best results. I feed raw turnips, mangolds, or cabbages, at nine o'clock in the morning; at noon, a small quantity of meat one day, and broken bones the day following; at four o'clock, a good, warm mash, consisting of table scraps, with a quantity of ground grains, mixed with skim milk, just what the flock will eat up clean. After which, give them a small-sized handful of whole grain, per hen, sown broadcast in the litter on the scratching pen. They should also have free access to grit, such as broken crockery, fine gravel, broken oyster shells, etc. I think this method of feeding imitates summer conditions as near as any I know of. It gives them exercise, and at no time do they have a completely filled crop until roosting time. Hens of good laying progeny will be found to lay freely under these conditions. It also has the advantage with the ordinary farmer from the fact that when he has his chores on hand in the morning, the hens are scratching for the balance of the grain left over from the day before, and do not call for attention until his other barn work is done. So much for the production of eggs.

There are two methods of hatching eggs—one by the use of the incubator, and the other by the hens themselves; ordinarily, the farmer will use the hens for this purpose. Hens that lay freely during the winter are always ready for early setting. When hens become broody, and it is desirable to set them, they should be removed to some quiet place. Some have an idea hens cannot be moved from one nest to another for setting purposes. I have never experienced any trouble.

I always move them at night, and leave them fastened on their new nest during the following day, opening it in the evening, and in nine cases out of ten have no difficulty.

If not set on the ground, the bottom of each nest should have a few shovelfuls of moist earth pressed into a saucer shape, and covered with a little soft hay or straw. Two or three china eggs will do for testing the setters with, and as soon as they become accustomed with their new quarters, they may be given 12 or 14 eggs, according to the size of the individual. The setting eggs should be selected from the very best types of the flock, which have been good layers. To do this, select ten or twelve hens with broad blocky bodies, of medium length, breast carried well forward, full and broad, of medium depth; legs should be short, stout, and set well apart, of white or yellow color; heads should be medium size. The male should be of the same type, of good laying stock. The setting hen should be given free access to grit, pure water, and whole grain. I have found it a very good idea to set two hens at one time, then when the chicks are hatched one can mother the broods, and the other can be broken up and put to laying again. The chicks should be left in the nests until thirty-six hours old, after which they may be removed to comfortable quarters. The first food should be stale bread crumbs, or rolled oats. After they get a few days older, they may be fed on ground grain, mixed with skim milk. A small quantity of food, fed regularly four or five times a day, will be found to give the best results. When the chickens have reached four months of age, they should be put into fattening crates, and fed from 22 to 24 days. It has been too common a practice for farmers to kill their chickens without any preparation. Where is there a farmer who would think of going to their stable and kill a cow or steer or hog without first fattening them? It is just as necessary to feed and fatten the chickens, if we are to obtain the best results. When the chickens are first crated, they require some attention, as they have been accustomed to the freedom of the farm and a variety of foods. They should be gradually brought to a diet of ground oats, ground very fine, mixed with skim milk. I have found a small quantity of buckwheat flour added to this mixture a good thing. The first week they should be fed three times a day, after that twice a day will be sufficient; the last ten days a small quantity of tallow, per chick, should be given. A pair of chickens, fattened this way, should weigh from 8 to 11 pounds per pair. The flesh will be found tender and juicy, and well coated with fat.

In killing for the English market, the necks should be dislocated; the bodies picked dry, and left undrawn. The local market requires they be drawn, and the head removed. In all cases the carcass should be shaped in a shaper, which is made of two six inch boards nailed together lik a V shaped trough. As soon as the chickens are plucked, the legs should be folded up underneath the body, and set on the bottom board of the shaper, and firmly pressed down, and a brick placed on its back to hold it in place until it becomes cooled. Carcasses shipped in this manner assume a plump and neat appearance, and always sell at a better price, and much quicker than when on the market in the ordinary hap-hazard style.

As a rule, it is not wise for any person to go into the poultry business extensively unless they have a natural adaptability in that line, and have been able to make a good success of a small flock. "Begin at the bottom and work up." If this is done, I believe there is room for from 50 to 150 hens on each farm in New Brunswick.

FODDER CROPS.

BY W. S. FRASER, BRADFORD.

The lands of New Brunswick are almost wholly given up to growing fodder crops, and it is well that out of the many kinds we should select the best. In travelling throughout the Province, I feel convinced that a much better choice can be made than the main one that is now grown, viz., Timothy. At best, it is looked upon as a land robber, draining largely on the plant food and exhausting the soil very rapidly, and not answering the purpose for feeding stock nearly as well as others which we may grow.

Another condition of agriculture in this Province that strikes a stranger, is that so small a portion of the land is ploughed. In the Province of Ontario nearly all the land is ploughed every year, as well as a good portion of it ploughed twice, or worked with other instruments. The hay, or pasture land, which is largely clover, is allowed to stand for one year. More soil cultivated, both in the extent of land, and also in more frequent cultivation during the autumn, would be beneficial, inasmuch as it would make more plant food available, and also destroy the roots of some of the undesirable grasses and weeds.

A large portion of all our crops is now used for feeding stock. This is true to a greater extent than it was in former days, for the reason that the price of grain and hay is lower than it was years ago, and the price of stock higher; consequently the bacon hog, beef cattle, well-matured horses and dairy products are the medium through which most of our products are marketed. This means better farming, more skill and labor required to run a farm, and ensures better land fertility. I do not propose to discuss all the crops which we use as feed, but will deal with some of them only.

Indian Corn. Among the crops cultivated most for feed, this is the largest, and, when properly cared for, will produce from 15 to 20 tons of good fodder per acre. The quantity and quality depend largely upon the amount of cultivation we give it. This is one of the crops a farmer has under his control, to a great extent, particularly when the season is dry, when by judicious and frequent cultivation we conserve soil moisture.

Grasses and Clovers. We are told there are 300 different kinds of grasses, many of which are unknown to us, and of little or no value to the farmer. Some of our grasses are valuable as pasture, and not so valuable for hay — June grass, for instance — while others are more valuable for hay than pasture, such as timothy.

The value of grasses is dependent upon their productiveness, hardiness, richness in flesh-producing qualities, palatability, and their effect upon the soil. The number of grasses in general use by farmers are few. Prominent among the new ones now being introduced is Awnless Brome, from the Northwest, where it has produced four tons of hay per acre. It is a strongly-rooted perennial, producing hay of good feeding quality. It gives a good aftermath, which is much relished by stock. It is now being experimented with both at Guelph and Ottawa, and we may expect soon to know definitely its possibilities.

Orchard Grass. A vigorous growing perennial; starts early and grows continuously throughout the season; is valuable as a pasture plant. Those who lay down land to permanent pasture should give it a prominent place in the mixture. For hay it must be cut early, or it becomes hard and woody. This is true of all grasses, that if cut at the early flowering stage their feeding value is much higher. As the plant approaches maturity the albuminoids and fats decrease, the fibre increases, and it becomes more indigestible.

Fescus. The tall and meadow fescus are valuable for permanent pasture. They are early grasses, and continue to grow late in the season, and are very suitable for high lands. For low marsh lands Blue Joint is very suitable. It is a heavy cropper, and relished by stock. The stems remain green after the seed is ripened.

Wild Timothy. A hardy grass, which is also recommended for low lands which are too wet for cultivation.

Timothy. The best known of all our grasses, and occupies a more prominent place than it deserves. It is more valuable for hay than as a pasture plant. Its feeding value as hay is not so great as well-cured clover. It is exhaustive to the soil. Two tons of timothy hay will take nearly as much nitrogen from the soil as a crop of oats, 50 bushels to the acre, and a crop of barley, 35 bushels to the acre. It takes more phosphoric acid and twice as much potash as both these crops. In the early days, when the land was rich and covered with stumps, it served a good purpose, as it remained long in the land, producing good crops, and in many instances brought good prices, but under the changed conditions of the present it does not rank a good third as a profitable hay or pasture crop. In fact, I believe we can do well without it on our farms.

Clovers. We have several kinds of clover, all of which are valuable. The large Mammoth Red grows the largest tonnage of hay per acre. It is later in maturing than the small red, and does not give as good an after growth.

Small Red is most common, and many farmers do not realize its value. It stands preeminently as a nitrogen gatherer and land improver. The fertility added to the soil by growing clover one season is estimated to equal fifteen loads of barn-yard manure per acre. Its roots have been found to penetrate to the depth of four feet, which tends to render the subsoil more porous. The crop should be cut when one-third of the heads have commenced to turn brown, and when properly cured it makes hay of very high feeding value. Horses require less grain when fed good clover hay than if fed timothy. Care should be taken to limit the quantity fed to horses, as they will eat more of it than is good for them when at hard work. Red clover is a biennial, and cannot be depended on for more than one season.

Alsike Clover—a triennial. Is more suitable for low or wet soils than the Red. It produces a good quality of hay. It is a very profitable crop to grow for seed, in a good season producing as high as eight bushels per acre. Much land in New Brunswick, it appears to me, is very suitable for growing this valuable crop. The hot weather in Ontario, when clover is in blossom, prevents it filling as well as it otherwise would if the weather were colder. In this particular, I think the farmers of New Brunswick would be more certain of obtaining as good a crop than Ontario farmers. It is the first crop that is used for seed production; about five pounds of good seed is sufficient to sow, while Red Clover requires ten pounds, Alfalfa twenty pounds per acre. The land most suitable is clay, or clay loam, or sandy loam.

Lucerne, or Alfalfa. This is a large-rooted perennial clover; grows rapidly, producing three crops of hay, amounting to from five to seven tons per acre in one season. It is most valuable for feeding stock, either as a soiling crop or hay for pasture. For hay it should be cut when one-eighth in bloom. Never cut when wet from either dew or rain. Coil the same day. When properly cured, it is very rich in flesh-forming qualities, accordingly its feeding value is equal to wheat bran. Some hold that it equals in feeding value pound for pound with bran, while others are inclined to deduct somewhat from it for the reason that it will require more energy to digest it, and another authority detracts somewhat from it for the reason that it is more bulky. Notwithstanding these objections, it is evident that it is the most valuable plant we can grow for stock feeding. Farmers should certainly make a great effort to establish it on their farms. To ensure success it is perhaps better to sow it alone, 15 to 20 lbs. of seed per acre (although I have had it succeed well when sown with barley). It grows continuously throughout the dry season, and when once established, will continue for years, if not pastured too closely.

Hairy Vetch. A winter annual; a rapid grower; rich in flesh-forming properties; valuable for soiling or hay pasture; will do well when sown in the spring, but better if sown in early September for the following years's use.

Millets. A quick-growing annual; valuable as a catch crop; may be sown in June. It produces large stem and leaf growth; if cut when seed is forming makes good hay. If left for seed it will produce from 30 to 50 bushels per acre. The Japanese varieties are decidedly the most profitable to grow.

Farmers should study closely their conditions, and the different kinds of grains and fodder crops which are obtainable, not relying upon flaming advertisements, which each year appear in our papers and catalogues of seed, but depending rather upon reports from our exprimental stations, which are the results of repeated trials under varied conditions, carefully carried on by men who know, and are not interested in booming any particular kind of grain. In this way we may be able to select kinds that will do much better for us, and increase our profits and the wealth of our country, ever remembering that low grade seed containing weed seeds is dear at any price, and should never be sown.

DISCUSSION.

Q.—How would you kill couch grass? A.—W. S. Fraser, Bradford. By frequent cultivation early in the season, then sowing thickly with buckwheat. When well grown plow under and sow again with buckwheat. Thus you get rid of the couch grass and add humus to the soil.

Q.—Is the plant food always near the top? A.—Plant food is one foot deep.

Q.—Would it not be better to bring clay up in sandy soil? A.—There is always more plant food in clay than in sandy soil.

Q.—In plowing sod, would you plow deep or shallow? A.—Plow shallow.

Q.—Can you get the land too fine to get a stiff straw? A.—The finer the land the better the mechanical condition, and the more plant food available.

Q.—About how deep would you work it fine? A.—Three or four inches in spring.

Q.—Do you prefer drills to sowing on the level? A.—Yes, I do. I always like to have a drill, not too high, for by planting in this way you can set your scuffler to go very close to the plants, thus drawing the weeds to the centre, and giving you a better chance for thinning.

Q.—Does it pay to sow the salt on the mangel ground? A.—In my experience I have found that it does.

Q.—What effect does the salt have on the land? A.—Well, salt is not itself a plant food, but it has a mechanical effect in setting free plant food, so that the plants can take it up, and it attracts moisture and holds it during the critical period of summer drought.

Q.—What varieties of roots do you prefer? A.—The Giant, Yellow, Intermediate Mangel, and the Danish Sugar Beet. I prefer the latter for milch cows and hogs, as they really solve the problem of profitable hog feeding in winter.

Q.—Will not the moisture escape more rapidly from a rough surface than from a smooth one? A.—Yes, certainly. The seed bed should be as fine as possible.

Q.—Is deep or shallow cultivation best for spring crops? A.—All crops are better for shallow cultivation in the spring.

Q.—In plowing clover sod for wheat, do you find any difficulty in getting a stand of wheat? A.—No, providing the sod is well rotted and the soil well compacted.

Q.—Is anything lost by allowing the manure to rot? A.—The manure is never better than when put on the land fresh from the stable.

Q.—Do not the rain, air, and cultivation dissolve plant food? A.—Yes. The better the physical condition of the soil, the more available will be the plant food for the growing crop.

Q.—Would you recommend both fall and spring plowing? A.—No. Plow in the fall, and work a fine, shallow seed-bed in the spring.

Q.—Is there any danger of clover getting too much top in the fall? A.—No, very seldom.

Q.—Will not alfalfa last longer than red clover? A.—Yes. It takes alfalfa two to three years to become well established.

Q.—In breaking up a clover sod, when would you plow it? A.—In the fall, turning under the after growth.

Q.—What method would you employ to rid a field of weeds? A.—Plow shallow immediately after harvest, and harrow well; then plow late in the fall, and follow with a hoe crop the next summer.

Q.—What method do you adopt in preparing the ground for mangels? A.—If you are not following a system of rotation, you should choose the poorest and dirtiest field; cultivate shallow after harvest; plow a fair depth late in the fall; apply the manure during the winter; spread it evenly over the surface, and then work it into the soil in the spring with the plow or disc harrow.

Q.—Do you sow turnip seed deep? A.—No. From half to three-quarters of an inch.

Q.—What grain crop would you sow after roots? A.—Barley, and seed with clover.

Q.—Do you plow the root ground in the fall? A.—No, it is better to leave it and work up a seed bed in the spring.

Q.—Why? A.—Because if you plow it, the fertile soil will be buried beyond the reach of the plants.

Q.—Do you prefer applying the manure in the winter or spring? A.—I prefer the winter.

Q.—Why? A.—We have more time at our command in winter.

Q.—Which are the hardest on the soil, turnips or mangels? A.—I think mangels are a little harder on the soil.

Q.—How much plaster do you sow per acre on young clover? A.—From 50 to 100 pounds.

Q.—How do you apply wood ashes? A.—Alone, and about half a bushel to an apple tree of bearing age. Locally, if applied to a corn hill.

Q.—What would you apply to lawns? A.—Good, well-rotted farm manure is all right. Special fertilizers may also be used.

Q.—What do you think of sowing clover seed in the fall? A.—I have seen some good catches where sown at last cultivating of the corn. I believe it would do well if sown alone in the fall on a good seed bed.

Q.—Is salt good for soil where grass seeds are sown? A.—Yes, it would be all right to apply it under such conditions, as it would aid in freeing plant food.

Q.—How do you apply manure? A.—I prefer to apply it as a top-dressing fresh as it is made in the winter time. There are various methods practised which are good, but the way that will give us the most complete returns with the least labor is, to my mind, the best, and that is the one outlined.

Q.—What would you do with wood ashes? A.—I would use them in the orchard, and in the fruit and vegetable garden.

Q.—How would you get rid of couch grass? A.—Buckwheat is one of the best crops to sow on land infested with quack. Plow down the first crop and harvest the second.

Q.—Are wood ashes of any value as a fertilizer? A.—Yes, to fruit trees and meadows. They should not be mixed with farm-yard manure.

Q.—Does it pay to cut straw? A.—Yes, it enables us to form a ration in better shape, rendering roughage more palatable.

Q.—Does it pay to grind grain? A.—Yes. As a rule, it aids in the digestibility of the food.

PLANTING AND CARE OF AN ORCHARD.

BY F. A. SHEPPARD, QUEENSTON.

The first essential point in planting an orchard is the site and the adaptability of the soil to the variety of trees to be planted, as some do best on light soil, while other varieties do their best on a heavy soil.

A great deal has been said and written about site. What slope is best? The two important points as regards site are sun-scald and root-killing. I think, as a rule, more trees are killed by sun-scald than by root-killing, so that, generally speaking, a northern slope is preferable, but whatever the slope, the land must be well drained. Too much stress cannot be laid on the importance of having orchard land well drained. Some varieties of trees will live and do fairly well for a time in wet soil, but they will be short lived, and never very profitable. It is always well to have your land in a good state of cultivation, and well enriched before the trees are set, so that they may get a good start.

One of the most common mistakes made in planting trees in the past was to plant them closely together. I saw a great many trees in this

Province this winter that were only 12 feet apart. In setting an orchard, give the trees plenty of room, so that when they are full grown there will still be room for plenty of air and sunshine.

Planting. A few people have advocated planting in the fall. My own experience and observation lead me to believe that early spring planting is the best, but when I say spring, I do not mean the first of June. Plant as early in the spring as the ground will work; before the trees have become dried out and white. There is an abundant supply of moisture in the soil. Dig a good-sized hole; spread the roots out all around the hole and fill in with fine surface soil; work the earth well in among the roots, and tramp firmly to within an inch and a half of the surface. Leave this inch and a half as a loose mulch to prevent evaporation. A few hours' extra time spent in careful planting will greatly reduce the number of dead trees in the fall.

Cultivation. The success and profit of the orchard in after years depends largely on the care the trees receive when young. A tree, like an animal, has a life, and we can make or mar that life according to the amount of care and food we give it when young. Our farmers generally have come to realize the great importance of keeping their young stock growing right from the start; but I fear that quite a number have yet to learn that it is equally important with the young tree. A stunted calf or colt will never make as good a cow or horse as one that has never had a check, and it is just so with the tree. If we allow it to become stunted in its early years for want of cultivation or lack of plant food, it will never make a profitable tree afterwards. I believe that thorough cultivation is the best treatment for an orchard at all times, but especially until the tree begins to bear. My own practice is to use hoed crops for a few years, and then let the trees have all the ground to themselves. Give clean cultivation from early spring until the middle of July, then seed down with some cover crop. This takes up some of the moisture and checks the growth, and causes the wood to ripen up. This cover also makes a mulch on the ground, which protects the roots in winter.

DISCUSSION.

Q.—Have you a remedy for sun-scald? A.—Protect the trees on the south and south-west sides from bright sun in the month of March by putting something on the trunk, such as boards, elm or hemlock, or cedar boughs.

Q.—How far apart would you plant trees? A.—Apples not less than 30 feet.

Q.—How often do you plow your orchard? A.—Usually once a year; some times only once in two years. Where we use clover as a cover crop we plow it in the spring up to the trees, then work down with disc and harrow. When using barley or buckwheat for cover crop, we often work it in spring with disc and cultivator, and plow up to trees the middle of July, just before seeding again.

Q.—We have a great deal of black knot. Have you a sure remedy? A.—Yes. We have no trouble with it now. Black knot is a fungous disease, and is spread by germs or spores that ripen on the knot, and are carried by the wind into other parts of the tree, where they take root and grow. Spraying with Bordeaux mixture to kill the spores, and cutting off and burning the young knots before they ripen seed, is our method, and we have found it entirely satisfactory.

Q.—Would you trim a red currant in a bush or in a tree shape? A.—I would prefer the tree shape, if I could get it, but it seems next to impossible to keep them in that shape. Our best variety, Fay's Prolific, will not grow that way.

Q.—Do currants require much pruning? A.—Yes, quite a lot. We trim in spring, cut out a portion of the oldest wood each year, and leave as many new shoots. In this way we always have a supply of new wood. Do not have your bushes too thick.

Q.—What soil is best for currants? A.—A moist, black soil. They require to be well manured if they are to yield heavy crops.

Q.—What time of year do you prune your apple trees? A.—Usually in March. I think June would be better for the healing of the wounds, but at that season of year we have not time for the work. Besides this, one can make a better job of it when the trees are bare of foliage.

Q.—Do you use wax or paint on wounds made by cutting off large limbs? A.—I use linseed oil paint; but I would rather prune a little every year, and take the extra limbs out when small. However, when you have to cut large limbs, by all means use paint.

Q.—When would you spray? A.—If for fungous diseases, twice before blossoming, and once or twice after.

Q. — Can you graft cherries? A. — Yes, but not satisfactorily. Budding is preferable.

Q.—When would you bud? A.—Latter part of July, or middle of August.

Q.—How far apart would you plant strawberry plants? A.—Rows four feet apart, and two feet in the row.

Q.—What would you do to give plum-trees a start in very heavy, stiff clay land? A.—Dig a good, big hole and fill with mellow surface soil, so that the trees may get a start the first year. After that they will likely be all right.

Q.—What is the cause of apple trees dying on the south or west side? A.—It is what is known as "sun-scald." Early in the spring, when we have bright, warm days, the sap starts up the south or west side of the tree. Then, if the temperature falls at night to several degrees of frost, the sap cells are ruptured, and the bark dies on that side of the tree. Anything that will protect the tree from the direct rays of the sun at that season will be beneficial.

Q.—What do you consider the best raspberry? A.—For red, I prefer the Marlborough and Cuthbert; black, Gregg and Souhegan.

Q.—Can you do anything to prevent the black-caps from sprawling all over the ground? A.—Yes. Nip off the young canes when about three feet or three and a half feet high. This will stiffen the canes and they will not fall down.

Q.—What are the best varieties of sour cherries? A.—Early Richmond, English Morello, and Large Montmorency.

Q.—Have you any trouble with cherries suckering from the roots? A.—That is the case with the ordinary, common cherry, but the budded varieties, which are budded on imported stock, do not sucker.

Q.—Have you any trouble in getting your trees true to name? A.—Yes, sometimes, but not so much in later years as formerly.

Q.—What do you do to prevent it? A.—Buy from the most reliable nursery men, and cancel the substituting clause in the order sheet.

Q.—What time of year do you prune your raspberries? A.—In early spring. Take out all dead wood and thin out to about five or six good, strong canes to a hill. Then in July, when the young canes get about three feet high, head them back. That will make them stocky, and will make the wood ripen better, and the danger of winter killing will be greatly lessened.

Q.—How far apart would you plant apple trees? A.—Never less than 30 feet.

Q.—Do top-grafted trees begin bearing sooner than those on their own roots? A.—Yes, as a general rule.

Q.—Would you grow a crop in your orchard when young? A.—Yes. I like a hoed crop for the first, as the cultivation is the best treatment for the young trees. I prefer corn for the first year. It grows up quickly and protects the young trees from the sun and wind, until they become firmly established. A crop of grain will not do any damage if it is kept back far enough from the trees to permit of cultivating between the grain and the trees. After the trees get to be a good size, and begin to bear, I would not think of taking off a crop of any kind. I have seen farmers take a crop of hay from their orchard annually, but as a rule that was the only crop they got. Apples were scarce. They blamed the trees for not bearing, but were themselves at fault. The trees were being gradually starved to death; no fertilizing material was being added to the orchard, and the hay crop was robbing the ground of what little plant food it contained, by taking up the moisture that should have gone to maintain and feed the trees.

Q.—When pruning, do you cut close to the tree, or do you leave a place, say an inch long? A.—I cut close, and leave a clean, smooth surface.

Q.—Do you prefer the orchard in sod, or should it be cultivated? A.—Cultivated by all means. Sod should never be tolerated.

Q.—What kind of fertilizer is best for an orchard? A.—Barnyard manure, wood ashes, or clover and ashes.

Q.—What value is a cever crop to an orchard? A.—It takes up the plant food liberated in the soil. It also pumps the moisture out of the soil, and in so doing checks the growth of the tree, causing the wood to ripen well, so that it may be better able to stand the winter frost. It also causes the fruit buds to develop to a greater extent than they otherwise would. It is also a trap to catch the leaves. The snow is then held longer, and this keeps the ground warm. Then when it is plowed in, it returns humus and plant food to the soil.

Q.—When should this cover crop be plowed in? A.—During the month of May.

Q.—When should the cover crop be sown? A.—About the middle of July.

Q.—What makes the best cover crop? A.—Common red or crimson clover.

Why? A.—Because it has the power of gathering nitrogen from the air and storing it up in the plant.

Q.—How much clover seed do you sow per acre? A.—From 12 to 15 pounds.

Q.—Have you ever used the hairy vetch? A.—No, but I believe it to be a valuable plant.

Q.—How much seed of the hairy vetch should be sown per acre? A.—About five pecks. It costs about five or six dollars per bushel.

Q.—What is the value of an orchard that is well kept? A.—A bearing orchard of good varieties is worth $500 an acre.

Q.—How is humus obtained? A.—By plowing in manure, clover and other green crops.

Q.—What are the best hardy stocks for grafting on? A.—The Talman Sweet.

Q.—Will Spies come into bearing earlier by being grafted on Talmans? A.—Yes, in about half the time.

Q.—At what time do you spray? A.—Just as the leaf buds are bursting, or the trees are leafing out; just before the bloom opens; when the bloom has fallen, and in ten or fifteen days after, if the weather is fine.

Q.—Will spraying destroy the black spot? A.—Yes, if properly applied.

Q.—Will spraying control the codling moth? A.—Yes, to a certain extent.

DAIRYING IN NEW BRUNSWICK.

BY N. S. DOW, WOODSTOCK.

A very important industry in our Province, and one that has received a good deal of attention from the Department of Agriculture during the last quarter of a century, is the dairy business.

When work was first began along this line, the idea of making money from the cows had not occurred to the average farmer, and we were then hardly supplying our own markets with butter and cheese, while our exports were nil. Since then, a considerable interest has been taken in the work by the farmers in many sections, who, with the aid of the Government, have erected, first a considerable number of cheese factories, and, later, not a few butter factories; the output of these having supplied our own market with a good article of food, and the remainder having been shipped out of the country, which same has become a valuable asset in our " balance of trade." It may be said, in consideration of the fact, that several factories have proved a bad financial venture, that " the game has not been worth the shot," or that aid given some factories in certain localities has not been appreciated by the people, and has not been of any benefit to the business in general. But such is not the case, as can be proven by one fact in particular, that where factories are in operation now, or have been in the past, farmers have a more or less intelligent understanding of their business, the result of information obtained through the medium of the factory. In looking back over the past, and comparing it with the present, there has certainly been a substantial improvement in the dairy end of the farm.

CO-OPERATIVE DAIRYING.

Co-operation, or the system of working together, has been particularly encouraged by the Government through their officers, the Dairy Superintendents, as they were of the belief that the interests of the dairy farmer could be best advanced by manufacturing the milk from a number of farms in one building, where a maker would be in charge, and thus secure a good, as well as a uniform product, which would readily sell for a fair price.

Some of the advantages of the system may be noted briefly as follows:—

(a) There could always be a market for a farmer's milk where cash was paid, and he was never under the obligation of selling his butter at the store and taking it up in trade.

(b) The quality of the product began to improve, and continued to do so from year to year, until now there is no excuse for the public having to eat either bad butter or cheese. This was good for the consumer, and was also good for the producer, as there was an increased demand for a good article, for which a better price was paid than for poor goods.

(c) The exporting of dairy products had the effect of regulating the home market, cleaning out the surplus stock and placing prices practically on an export basis. This was a benefit to those that could not reach the factories.

(d) Farmers who did not, or could not, patronize the factories, found it absolutely necessary to improve the quality of their products, with the result that many have become good butter makers.

In some instances, particularly in Kings County and the Danish Settlement, in Victoria County, great strides have been made in co-operative work, and in these districts farmers have made dairying their particular business; and, if we are to judge by the appearance of the farmers and their surroundings in these districts, the dairy cow has not lived for them in vain.

OWNERSHIP BY PRIVATE PARTIES.

Where the factories have been owned and operated by private parties who have bought the milk from the farmers for a certain price and taken their chances in the matter of profits, the showing is not, as a rule, so good as when factories have been owned and operated by the farmers themselves.

The reasons for this are not a few. First, there is the lack of interest on the part of the farmers, as no man can be expected to take as much interest in another man's business as if he had a share in it himself. Again, it seems to be human nature to distrust one another, and some men seem to have an extra amount of this nature, and also seem to think that the factoryman is fully as bad, if not the worst, person you could trust, showing that a man to succeed in that position must not only be strictly honest, but must also have a special gift of good judgment in dealing with all the different natures that he comes in contact with.

Another difficulty that appears to hinder the successful management of factories owned by private individuals, is that we seldom find a man with enough money to start the business, that at the same time has the practical experience, which is a very essential thing for anyone thinking of putting money into the business. When both money and experience are combined, there seems to be much less trouble, and the results are nearly always satisfactory to all parties interested; but whether factories are owned and operated by private parties, or by a co-operative company of farmers, they certainly deserve the support and liberal patronage of all the farmers within reach, for it is to them that nearly all the money received for the manufactured article is paid; and this money, if it is received for goods exported, as is generally the case, means a good deal more than the bare figures suggest, as the money paid to the farmers goes to pay other bills or buy goods, generally to some party in the nearby town, who, in return, pays his obligations. In this way we find one dollar creating several dollars' worth of trade, and the amount of good done to the community is hard to estimate.

Financiers estimate the country's prosperity depend largely on two items—the amount of internal trade, and the amount of the exports, and the first is often influenced by the latter, and what is true of a country or a nation, is also true of a smaller community.

One of the trials of "managers" of factories, especially when the cost of manufacturing is high, because of the small quantity of milk received, is that the factories can pay no more for milk than the farmer can get by making up his butter for the local market. This is a serious question in some localities, yet it should not be, for how would there be a local market today in Canada if all the goods manufactured were placed on the market. The export market makes the local market what it is, and the man in the community who takes advantage of this at the expense of those who give their support to the factories, will never be hung for his generosity, nor become poor while selfishness will make him rich. Private dairying should be left to those who cannot reach the factories. When viewed in the light of the above statements, co-operative dairying has been one of our country's greatest booms, if for no other reason than that the system is the creator and mainstay of export trade in dairy products, and when we realize what a large item dairy products form in the grand total of exports, we must be proud of our efforts of the last few years.

Although we have had a number of years of prosperity, it does not follow that we are on top today, and this seems to be the great danger at present. We must always bear in mind the fact that labor is required to even help that which we already possess, and that special efforts are necessary if we are to advance.

SOME OF THE DANGERS IN FUTURE.

Probably one of the greatest dangers in the way at the present time is the lowering of our "standard of quality." This seems to be already affecting us, and must be guarded against if we are to succeed.

It is easy for farmers to become careless in the handling of their milk, and they can either make or break the reputation of the factory at their will, not because they would do so intentionally, but generally because they neglect some little essential in the milking process, or taking care of it after it is milked. This can always be remedied if a good, level-headed man is in charge of the factory, but some men are liable to be weak in the management of his patrons, with the result that he gives in too easily, for the fear of giving offence, and takes milk or cream which should be rejected.

Milk should not be rejected unless an effort is made at the same time to ascertain what is the cause of the trouble, and an experienced maker can nearly always tell by the use of his nose what has gone wrong, at least he can generally put a patron on the right track. Makers must also remember that their methods can always be improved, and that there is great danger of their becoming careless.

Dairy Superintendents also have their share of responsibility to bear. They may pay regular visits to the factories, and can keep the makers "brushed up" on the latest dodges in market, the changes in the consumers' taste, and the latest points in factory management.

HAND SEPARATORS.

A few years ago little did we think that the hand separator on the farm was to play such an important part as it is today.

For a long time the question was, Was it a benefit or a curse to the business? Many prophesied that they would all be discarded in a very short time, and that the great cost, trouble of cleaning, and operation, and lack of durability, would soon put them out of commission, but the inventor improved them, and agents have continued to proclaim their wonderful merits, until now they are being used quite extensively. Their adoption has created great disturbance in some districts where cheese factories were in operation, and have also affected the butter factories, although to a less extent; but if all the farmers will buy these machines in sections where there are butter factories, thus doing away with the trouble of carting the whole milk to the factories and waiting for it to be skimmed. In short, if farmers can be all induced to adopt the same method in any one district, the hand separator will become generally recognized as a real benefit to all.

The question of quality of the product again arises when we come to separators, and they have had the effect of lowering the standard of quality, where special care has not been exercised by both farmers and makers, but it is possible to make just as fine an article from hand separator cream as when skimmed at the factory.

BARNS AND STABLES.

One of the greatest drawbacks to successful dairying throughout the Province is the lack of good, up-to-date barns and stables. Not one barn in twenty is anything approaching what could be styled a modern, convenient, and up-to-date building. There are, however, a number of very good buildings being erected every year, and they show that the farmer has seen the need of improvement from the old style. These new buildings are, as a rule, larger than the old style, the aim being to have one large, rather than two or more small barns.

Farmers have of late endeavored to make their stables for their stock much warmer than they were years ago, and now you may find not a few who can boast that their stables never freeze in the coldest weather. This is very commendable, and shows that men are thinking along the right line. But while there is evidence of improvement among very many farmers in this matter, there are far too many who seem to drift along in the same old rut, cattle standing and shivering in very poor apoligies for stables, with straw one of the principal rations during the greater part of the winter, with the inevitable result that cows are dry fully half the year, and will make their owner blush to tell how little they give when they are in milk.

LIGHT AND VENTILATION.

One of the greatest deficiencies in most of our best stables is the lack of sunlight and ventilation.

Sunlight is the greatest blessing the world possesses, bringing into action all the forces of nature. Imagine a world without sunlight, if you can, and the consequent gloom and inaction that would reign. We need no argument to force this thought as presented in the wider sense, but it takes a power of argument to convince the majority of farmers that domestic animals are as sensitive to the influence of " light and air " as the plants and trees, and human beings. A crusade should be made against dark, damp, stables, and an effort put forth to bring light and comfort to the animals we have imprisoned for so many long winter months.

THE BARN CELLAR.

One other lack of completeness may be noticed in the arrangement of the average barn is the absence of a good, warm, commodious cellar. Roots can be grown very successfully in any part of New Brunswick, and as corn is uncertain, and the silo consequently a failure in many parts, the root cellar is indispensible if success is to attend our efforts. The cellar, to be most profitable, should be as near the stock to be fed as is possible, and the old style of a large house cellar, and labor of carrying from the house to the barn what roots are fed, makes dairying and stock raising a slave's work. It is to be hoped that the present pace of improvement may be quickened, and that our Province may, in the near future, be able to take her place as the home of Canada's best and most prosperous dairy farmers.

A PRACTICAL TALK ON DAIRY COWS.

BY R. S. STEVENSON, ANCASTER, ONT.

Taken from Ont. Farmers' Institute Report.

The greatest difficulty that confronts the farmers, who are making dairying a leading branch of their business, is the building up of a good herd of profitable dairy cows.

It has been estimated, and, I believe, correctly so, that a large percentage of the cows kept by farmers very little more than pay for their keep. As a matter of fact, there are very few dairymen who keep any considerable number of cows, but what have some boarders in their stables. The sooner these cows are detected and turned into beef, the better for their owners, as the only profit that will ever be got out of such cows is when they give up their lives on the butcher's block. That, I may add, is the only right way to get rid of them. Do not sell them to your neighbors for dairy cows, as that is only continuing the nuisance in the community.

The question now arises: "How is the average farmer to procure a herd of good paying cows?" The answer is: "By breeding them himself, and by the continued selection of those that come up to a certain standard of production." There is no reason why every farmer cannot greatly improve his herd, but it can only be done by judicious breeding. No one need expect to build up a dairy herd who will persist in breeding from a beef sire. Who ever heard of anyone who was breeding roadster horses using a Clydesdale or Shire stallion? But you can find plenty of men who are using a beef bull and expecting to get good dairy cows from his offspring. Now, every farmer has some pretty good cows among his herd, and with these for a foundation, there is nothing to prevent him from breeding up a herd of good cows, but he must use judgment in the selection of the bull he uses with them. Without a sire of the proper dairy type, improvement is out of the question. Every man should choose a breed, and a certain type of that breed, and then stick to it. Never cross breed. When you are done with one bull, procure another of the same breed and the same type, and, of course, always pure bred.

A few points in selecting a bull may not be out of place here. Make it your business to find out what kind of a dam the bull had, whether she was a good cow at the pail and churn. Had she a perfect udder, with well-placed and good-sized teats? This is one of the most important points, as the bull has a great deal to do with the shape and style of the udders of his daughters, and if he came from a family of cows who had a tendency to go wrong in the udder, his daughters will, in a great many cases, have the same defect. A bull that has breeding of a high order, based on performance, is certain to get good calves, provided that as an individual he is satisfactory.

If dairymen generally would only realize the truth of the adage that "the bull is half of the herd," and how thoroughly, in the course of years, the blood and characteristics of the bull impregnate and dominate any herd where he is used, there would be very much more care used in the selection of our bulls.

DISCUSSION.

Q.—What percentage of pure butter fat should good butter contain. A.—R. S. Stevenson, Ancaster. About 85 per cent. pure butter fat suits the British market best.

Q.—Can milk be kept from Saturday night until Monday in good condition for cheese making? A.—By placing the milk cans in ice water and cooling the milk rapidly the milk can be kept in first-class condition.

Q.—Why is it that adding hot water to the cream in churning is a bad practice? A.—It aggravates the conditions, as the cream is already too thin.

Q.—What is the simplest way to aerate milk? A.—By inverting a perforated milk pan, that has a handle soldered on the bottom and pushing it to the bottom of the milk can.

Q.—Is it not a fact that dirty milk will make a greasy curd? A.—Yes, it very often does.

Q.—Will a milk poor in fat make as much cheese as rich milk? A.—No, the fat is what gives value to the milk.

Q.—What standard of milk is best for making cheese? A.—From 3.5 to 4 per cent. fat.

Q.—Do you prefer to feed wet or dry feed to cows? A.—There is no advantage in wetting the feed.

Q.—Does it pay to cut clover hay before feeding? A.—Not as a rule, sometimes in order to mix inferior fodder with it, it may, but not otherwise.

Q.—Would you advise feeding grain to dry cows? A.—Yes. Cows that are soon coming in again should be liberally fed, as they should be in good condition when they calve.

Q.—Can you increase the fat of a cow's milk by feeding? A.—Not for any length of time, as the richness of the milk is controlled by the individuality of the cow.

Q.—What can we feed our calves to take the place of milk? A.—Mix a small quantity (about a tablespoonful) of boiled flaxseed, with porridge made from oatmeal, add to this three or four quarts of hay tea, and you will find that your calves can be fairly well raised on this.

Q.—Is the small feeder among cows necessarily the most profitable? A.—No, the large feeder is the more profitable, as a rule, as one cow will do the work of two, and you save the feed, support and care of one cow.

Q.—Will a cow give a richer milk by milking three times a day? A.—For a short time only, and then she will revert to her normal standard.

Q.—Will a cow become worn out at seven or eight years of age if she has been heavily fed on grain all her life? A.—No. Cows are improved by liberal feeding.

Q.—Does it pay to feed grain to cows on a full pasture? A.—Yes, it will pay to feed a small grain ration, even on a full pasture.

Q.—What is the best treatment for a cow that has a caked udder? A.—First of all, give her one and one-half pounds of Epsom salts, then hand rub and bathe the udder with hot soapsuds.

Q.—Are pure-bred cattle profitable for dairy purposes? A.—Yes and no. The pure-bred dairy breeds are profitable, but good grades of the dairy breeds are just as profitable, and much cheaper.

Q.—What about the dual purpose cow? A.—Such a cow is all right, provided we can get her, but as yet we have not such breeds, and either one or the other of her characteristics is sure to be bred out, either dairy or beef.

Q.—Does not the Ayrshire-Holstein cross make a good cross for the dairy. A.—It depends on how you cross. If you take into your herd of Ayrshire grades a Holstein sire, then I say "No," as the cross is too violent, but reverse this cross and the results would be better. But I may add that whatever line of breeding you follow, Ayrshire, Jersey, Holstein, etc., stay by it; do not change your sire from one breed to another.

Q.—What breed of cattle do you keep? A.—That is a personal question, and I will give a personal answer. I keep grade Holsteins, using a pure-bred sire.

Q.—What standard should a dairy cow have? A.—I think individual records should be kept, and any cow not giving more than 4,000 pounds of milk in cheese season, is a positive loss; 6,000 pounds is a good standard for the average cow.

Q.—Will a cow eat straw if she is getting corn silage? A.—Yes; she seems to have a particular liking for chopped straw in conjunction with the silage.

THE EGG — THROUGH THE INCUBATOR TO THE HOME OR FOREIGN MARKET.

BY G. H. HUTTON, B.S.A., EASTON'S CORNERS.

Taken from Ontario Farmers' Institute Report.

No branch of farm operations is so universally regarded as an expensive necessity than the keeping of poultry. In most instances the opinion would change if care were given, and the poultry yard would be elevated to the rank of a paying investment. There is no dissenting voice when the dairyman asserts that to realize a safe margin of profit from the dairy, careful feeding and attention to the wants of the cattle is requisite. On the other hand, the average man makes but little outlay in either care or capital in respect to his poultry, and is surprised to find that he receives only a proportionate return. The beginner will be confronted by difficulties, and will be taught lessons by expensive experience. But that there is a liberal profit in the business awaiting those who study its various phases is beyond question.

We have long been producing eggs for market, but there is one feature of the poultry business of recent introduction which is growing with rapid strides, and bearing all the marks of permanency, presenting opportunities for money-making of which few farmers have as yet availed themselves. The demand in the home cities for well-fatted fowl has been far from supplied, and behind that we have the yawning gulf of the chicken appetite of the million-mouthed British consumer to which to cater. The white-breast cuts are coming more and more into favor in the high-class restaurants, and poultry sent across the sea has this year sold for from 14 to 16 cents per pound. Having then such unlimited markets at home and abroad, with high prices ruling, our only concern need be to study the requirements of the market, and to furnish the product it demands. The profit is assured.

In undertaking to cater to this market, we must exercise care in the choice of breeds, knowing that the consumer has cultivated peculiarities in his appetite which refuse dark legs or dark flesh in fowl. While it may be said with considerable truth, that success depends upon preference, to a degree, yet none should allow preference to be an absolute guide. I believe no mistake will be made if those breeding for this market would follow the "old reliable" breeds of Barred Rocks and White Wyandottes. The Buff Orpington is coming into favor, having quite sufficient strong points to warrant the popularity with which it is being received. Breeders should aim to secure uniformity. The market asks for large birds, well fatted. We, therefore, must choose a breed having size and a fitness in disposition for being crated for fattening. The breadth and general blockiness of the Barred Rock, together with their ease in adapting themselves to surroundings, commend them for this purpose.

Having made a selection of breed, in the problem of cheapest production, the question naturally arises, "How am I best to secure the chickens, by natural or artificial incubation?" When the farmer contemplates raising quite a number for market, I believe he will always find the incubator a valuable aid to the largest profit.

Some of the advantages of the incubator:

It is cheaper.

Requires less care and attention.

Less breakage of eggs during hatching period.

Larger percentage of chickens.

More healthy chickens, less liable to disease and vermin.

It permits of early hatches, if desired, resulting in pullets for early winter laying, and cockerels for sale or exhibition.

For ordinary practice, I would not advise setting the incubator extremely early, since, no matter how well-balanced a ration you feed, you will often secure a very low percentage of chicks. The eggs may be fertile, but the outdoor exercise seems necessary to impart the greatest vigor to the germ and to insure the highest success in incubation.

Secure a reliable machine and operate it in a room not subject to rapid changes of temperature and having a solid floor. When the floor is subject to vibration it results in injury to the vitality of the eggs, which are most affected by it during the first week, while the germs are knitting. A dry, cool cellar is an ideal spot. In choosing eggs, select only those of average size, rejecting those having anything abnormal in shell, such as roughness or dark specks, etc., as such are seldom fertile.

You may expect a large percentage of cockerels from early hatches and of pullets later.

I can offer no suggestions as to handling the machine, other than to carefully follow directions sent with the incubator, except perhaps to mention that by allowing the eggs to cool three or four times during the last eight or ten days to about 80 degrees, strength and vigor will be added to the growing chick, which will enable it to penetrate the shell and free itself at the proper time.

Thirty-six hours after the chickens are removed to brooders, either artificial or natural, as you prefer (my preference is for the former), give a first feed of sand, followed by one of hard-boiled eggs, chopped onions and stale bread, all fined and mixed. The eggs used are the unfertile ones tested from the machine, and the baker often has left over bread at reduced prices. Feed frequently the first week and restrict allowance of water. As soon as the chicks are sufficiently large, feed cracked wheat or wheat screenings, and later, drop to one liberal feed of wheat screenings per day, fed in the evening. Keep them dry, especially until feathers are formed, and provide plenty of ventilation.

When the birds have attained a weight of three and a half to four pounds it is time to crate for fattening. This crating process for the chicken is like stall feeding the grass-fat steer, and it is the time when the biggest money is made. The crates are built of lath, on a frame six feet long, 18 to 20 inches square, divided into three sections, and raised to an elevation convenient for feeding. We usually place twelve birds in each crate. Oats ground fine, with buckwheat in equal parts, or oats alone, mixed with skim milk, is the best ration. In the event of not being able to obtain skim milk, boiled potatoes are the best substitute. The usual time required to bring the birds to a weight of about six pounds is from three to four weeks, and the result of this method is that you have a finished article, superior in every way to the ordinary poultry offered, which easily commands the highest price paid.

BENEFICIAL AND INJURIOUS BIRDS.

A PRIZE ESSAY AT WHITLEY FAIR, ONT.

The farmer has pitted against him three powerful enemies — weeds, insects, and rodents. The careful cultivation of his acres, and the most scrupulous care in the selection of his seed will, in time, largely free him from the first of these evils; but the insect and rodent remain, and against these he is practically helpless. Happily, however, nature has forces at work preserving the balance between vegetable and other life. If there are many insects working against man, there are also others working for him, and insects and mice alike are under the surveillance of nature's keen-eyed police, the wild birds. In the briefest possible manner it is the purpose of this paper to deal with the relation of our common birds—those that may be found in our country—to agriculture.

Few, indeed, of our common birds deserve to be stigmatized as injurious. In the estimation of our legislators only hawks, crows, blackbirds, English sparrows and robins caught red-billed in the garden, merit capital treatment. Yet even of these excommunicates there is not one for whom a strong plea could not be presented.

All the hawks and owls have suffered for the mirdemeanors of a recreant few of their family. For out of more than 40 species only three kinds of hawk and one owl are chargeable with the misdoing for which all are condemned. The hawks that are popularly specified as "hen" hawks are absolutely guiltless of offence, feeding solely on mice, lizards, snakes, etc. The Marsh Hawk's stomach has been known to contain eight mice at one time, and it has been estimated that each one eats on an average at least six each day. The Sparrow Hawk is the commonest and smallest of the family and may be recognized by its red back. In Minnesota, some years ago, a student, M. de Lentrie, put five of their young into a cage where he could watch them. In one month their mother birds brought them 420 rats and mice, 200 mole crickets, and 158 lizards—and not one chicken! The only kinds that prey upon the coops are the Goshawks, Cooper's Hawks, and the Sharp-shinned Hawk, and not even these cost the housewife as many chicks as her pet cat.

The "Moping" Owl we see but seldom, as he is working for us while we are sleeping, and though owls are not common, we have more of them than we perhaps think. In the fall the Long-eared and Short-eared varieties are sometimes seen, while the Screech Owl is still occasionally found in our barns during the winter, where it thrives on rats and mice, killing more than it needs, in the simple lust of slaughter. It is also a terror to the English sparrows, destroying them remorselessly. In the summer it lives on mice, grasshoppers, beetles, crickets, and worms. Only the Great Horned Owl evinces a liking for poultry, and, luckily, it is not now common.

On his sable majesty, the Crow, it is difficult to pass judgment. The counts against it are many and serious. It is charged (1) that it pulls up sprouting corn; (2) that it eats green corn; (3) that it displays an unhappy fondness for ripe fruit; (4) that it destroys the nests and young of other smaller birds, and (5) that it devours frogs and toads, both of which are beneficial.

On the other hand, during all the time that it is feeding its young, it takes insects alone, grasshoppers, beetles, spiders and weevil being captured in large numbers. It is an interesting fact that it never destroys the useful little ladybird. Cutworms are its choicest food, so that if it does take its toll of corn, it is only a question of whether the farmer prefers the presence of the crow or the cutworm in his fields. From a careful examination of 1,000 stomachs, it has been found that its food is 33 per cent. animal, 57 vegetable, and 10 mineral. Of the first, 23, or nearly one-quarter of the whole, consists of insects and spiders. Of the second, 21.5 is corn. This is the average of the year, and includes all the waste grain gathered from the bleak winter fields, as in January the per cent. of corn is 28.5, and in February 39.4, while in May and June, when insects are to be had, it drops to 16, and in the harvest reaches only 18. But, unlike the hawk or owl, the crow needs no champion, as no bird is more capable of looking after itself. Of late years it seems to be even increasing in numbers, and if in any locality it is becoming too numerous, it can be shot during its nesting time.

There are charitable souls that have attempted to defend even the House (or English) Sparrow, but on this score the ordinary farmer will be found to be obdurate to all eloquence. It is true that it consumes a great number of moths, including the tussock, with currant worms, the aphides on apple trees and rosebushes, beetles and the unpopular green cabbage worm. It also exhibits a redeeming partiality for the seed of the knot-weed, a plant that would otherwise destroy our lawns. But against this, the prosecution can urge its wholesale destruction of buds and seedlings in the spring, its inroads on the wheat and oat fields, its filthy habits, its destruction of beneficial insects, and, worst of all, its shameless appropriation of the nests of other birds. Who would not willingly dispense with any service the Sparrow may render, to see the orioles, the vireos, the wrens and the warblers back into their old nests about the house and in the orchards?

The Sparrow has been in this country exactly thirty years, and is steadily increasing in numbers. The most that can be hoped is that organized effort may succeed in now keeping it in check. The whole experience shows how much more easy it is to make a mistake than it is to remedy the error.

The "Crow Blackbird," or Bronze Grackle, can claim at least an unusually handsome exterior, its feathers having a fine metallic lustre. It is the largest of the blackbirds, and in the fall is said to be choice eating. It has been celebrated in this connection ever since the day when "Four and twenty blackbirds were baked in a pie," of such rare excellence that it was joyously declared to be "A dainty dish to set before a king." But, beyond the eating of a few cutworms and other insects, it has nothing else to recommend it, while both at seed time and harvest it is a scourage to the grain fields. The Red-winged Blackbird can claim a better reputation, some writers going so far as to assert that seven-eighths of its food is composed of weed seed and injurious insects. But that other eighth——?

The Robin, the glad harbinger of spring, audacious and sinful, the most rollicking, the most exasperating of our garden visitors—what shall we say of it? We are prepared to forgive much for the sake of such cheerfulness, but at times human forbearance is sadly taxed. Useful it undoubtedly is, and so busy that if it isn't in mischief, it is loading us with benefits. Unlucky is the cutworm that comes under its sharp eye. While its young are in the nest, it feeds them with insects, and their voracious appetite demands that hundreds of our pests be captured every day. But by the time the young are able to forage for themselves, the cherries are ripe, and the result is that when the owner looks at the trees,

> "Where the Robins are loud with their voluble whistle,"

his rejoicing is turned into dismay. The robins enjoy strawberries, raspberries, and even pears, plums, and peaches, until by fall we are as glad to see them depart as we were to see them come, half a year before. The problem as to whether they should be destroyed or not must be decided by each man according to the measure of grace that is in him.

It is difficult to understand why our lawmakers do not place the Cowbird in the index expurgatorious, along with the crow and the sparrow. Charity itself could say little for this despicable bird. It appears in April, and is common enough in the meadows and beside the streams, where it feeds on insects. Later, it invades the grain fields. But its crowning crime is that it lays its eggs—whitish, covered with brown spots—in the nests of sparrows, finches and warblers. These eggs hatch first, with the result that the rightful young are crowded or starved out, if they ever hatch at all. In this way every female Cowbird causes the loss of from 15 to 25 valuable birds every season. If Nature lays the necessity upon boys to shoot birds, let it be these robbers.

The Blue Jay is another of our birds that is of uncertain utility. It is particularly beautiful, but, from the farmer's and gardener's standpoint, handsome is that handsome does. The Jay does not damage the grain, and he eats a number of insects, but he has an eye for fruit, and a sad predilection for the young of other birds, as well as for robbing and destroying nests. Which means that it cannot be tolerated around the garden.

The Woodpecker, unfortunately, labors under a cloud, owing to the prevalent notion that by piercing the bark of trees it kills them. For the comfort of the doubting, and in justice to the bird, it may be said that no case is on record of a tree being killed from this cause. Only one species is a sap-sucker, and it is migratory, so that no suspicions need be entertained of any woodpecker seen in the winter. The Red-headed Woodpecker is the most beautiful of its kind, but is somewhat uncommon. It is an expert fly-catcher, and has a taste for grasshoppers, beetles—and ripe fruit. In the spring it devours a large number of mature insects that are just preparing for a season's devastations, capturing many of them in th crevices of the trees.

For a week or so in the spring, the Flicker, Higholder, or Golden-winged Woodpecker, is abundant, and frequently may be seen on the ground, demolishing ant-hills, its curved bill and long tongue showing its aptitude for the work. Its value is debatable, owing to its relish for corn and cherries, and its reputation for destroying the nests of the bluebirds.

With the Bittern, Kingfisher, and Common Wild Crane, our list of "doubtfuls" is practically complete, so far as this district is concerned. The Bittern and Crane may be found near the Scugog, leaving the world the poorer by every frog, lizard, and fish that they despatch. The Kingfisher's loud, rattling cry can be heard by the streams and ponds in the spring. It subsists on fish.

The English Sparrow has several excellent and virtuous relatives. The Vesper Sparrow, one of our "gray birds," for all its tender and plaintive song, has a fine appetite for insects. So, too, has the Clipping Sparrow, which has been largely banished by the English marauder. One Iowa writer estimates that in that State the tree sparrow alone consumes 875 tons of weed seed in one season.

The Barn Swallow merits nothing but our best wishes. It fares on the smaller winged insects, and saves us from swarms of midges; often it gorges itself on large female ants. Its worst enemy is the sparrow, with whom it has to battle for its nest.

After the middle of May one has only to seek the clover fields or moist meadows to hear "The garrulous Bobolink lilt and chime over and over." With its exuberant and irrepressible spirits, the Bobolink is a joy and inspiration, and the more welcome to us poor materialists from the knowledge that it lives entirely upon insects. The chief item of its bill-of-fare is the caterpillar that feeds on the clover. After the hay is cut it frequents rice-ponds in large numbers.

It is to be regretted that, owing to the ignorance of man, and the bird's size and slow flight, so many Meadow Larks should be shot, so that we appear to be doomed to lose this useful bird. Its food is chiefly the worms that emerge only by night, it being endowed with the ability to discover their retreats. Later in the season it turns its attention to the grasshoppers.

The Kingbird is a familiar visitor, and may often be seen perched on the top of a dry mullein stock in a pasture field, darting from its point of vantage at beetles, dragon-flies, or other insects. It is the most assertive of our birds, taking good care that its presence is announced to all its neighbors.

Towards evening the Night Hawk's peculiar cry is to be heard over the meadows. Its graceful, sweeping flight is not wholly for pleasure, for suddenly it may be seen to plunge downward with great rapidity, rising again as suddenly. This movement has caused a cheerful Chatham poet to burst forth:

"With half-closed eye and quivering boom,
Descending through the deepening gloom
Like plummet falling from the sky
Where some poor moth may vainly try
A goal to win—
He holds him with his glittering eye
And scoops him in."

June bugs and night-flying moths and beetles are its principal food.

The Chimney Swift, like the nighthawk, lives entirely on insects, and, like it, is most active toward evening, catching its food only on the wing. The Whip-poor-will, whose soft, mournful notes may be heard at night in the swamps, also preys upon night moths and beetles.

No bird is more prodigal of its music than the Red-eyed Vireo, whose loud, clear notes are maintained all through a summer's day. During the earlier part of the spring it feeds entirely upon insects. Later, it prefers raspberries, and the berries of some of the wild plants. The Vireo is one of the greatest sufferers through the imposition of the cowbird.

What would summer be like if the dainty little Warblers could not be found in our orchards and shrubberies? We have many varieties, including the Yellow, the Canadian, and the Black and White. Although not notable singers, they are cheerful and eminently good to look upon. They live wholly upon insects, exterminating hosts of the small caterpillars that infest the trees, and still smaller insect enemies.

The Phœbe, or "Peewee," is one of the earliest birds of spring, building its nest under bridges, beneath the eaves of a deserted house or under a verandah. It feeds on insects alone.

It is not every orchard that is favored by the pert, industrious Wren. It is a lovable little creature, and one of the most indefatigable insect-hunters. Ninety-eight per cent. of its food is composed of insects—grasshoppers, beetles, caterpillars, bugs and spiders being taken in almost equal proportions.

The Chickadee is also a noisy and merry little insect-hunter. It is said that a single pair of these birds kill daily 500 of our pests, and frequently 300 cankerworm eggs have been found in the stomach of one bird. In the winter it pursues its sprightly way in the swamps, often accompanied by the White-breasted Nuthatch or the Golden-crowned Kinglet, all three actively searching for insects.

The Snowflake, or Snowbird, is a pleasant relief from the barrenness of the winter air. It is always seen in flocks, and consumes large quantities of weed seed.

Even the tiniest of our birds, the Ruby-throated Humming bird, does us the service of assisting in the fertilization of our plants and flowers.

The most unfortunate thing about the Catbird is its mewing call, the evidence of its relationship to the Mocking-bird. It destroys innumerable caterpillars and other insects, especially in the spring. It afterwards indicates a taste for elderberries and small wild fruits, sometimes encroaching even upon the garden.

The Cuckoo is not a common bird, but may occasionally be found in our orchards, arriving about the end of May. It helps itself now and then to wild fruit, and is accused of sucking the eggs of other birds. Be that as it may, it has the distinction of being one of the few birds that habitually feast upon hairy caterpillars. The stomach of one cuckoo, shot in 1887, contained 250 half-grown web-worms, one large beetle, one large plant bug, and one snail.

A few years ago the Bluebird, resplendent in its fine plumage, was a familiar sight on our farms, welcomed, like the robin, as spring's herald. But it has gradually given way before the tenacious sparrow, and is now fast disappearing.

The fate of the Bluebird, the Meadow-lark, the Cuckoo, and the Thrush appears to be overtaking still others of our birds, and only a few species are more abundant than they formerly were. It is time—high time—that public attention were drawn to the fact that, while our birds are becoming fewer, the number of our insect pests is yearly growing greater. If the wanton destruction of our wild birds continues at the same rate for the next quarter of a century, the effect upon our farms and gardens will be such as is not pleasant to contemplate. The situation is largely in our own hands, and the future will be what we make it.

AGRICULTURAL SOCIETIES.

The following table shows the number of Societies in each County of the Province, total number of members, total amount of subscriptions paid by members, and the total grants made in aid of Societies for the year 1904, not including special grants for County Exhibitions.

The membership and subscriptions are taken from the lists sent in 1st December, 1904, and represent the strength of Societies for the year 1905. The grants were paid on the subscription lists sent in on the 1st December, 1903.

COUNTIES.	Number of Societies in each county	Total number of members in each county	Total amt. of subscriptions.	Total amt. of Grants.
Albert	3	146	$319.00	$388.00
Carleton	5	360	578.00	680.00
Charlotte	1	60	100.00	120.00
Gloucester	4	281	345.00	453.00
Kent	3	275	325.00	374.00
Kings	6	504	856.00	922.00
Madawaska	4	298	353.00	455.00
Northumberland	6	442	675.00	751.00
Queens	1	....	....	109.00
Restigouche	4	196	199.00	532.00
St. John	3	127	294.00	518.00
Sunbury	1	61	61.00	98.09
Victoria	5	327	354.00	515.00
Westmorland	7	1,368	1,596.00	1,328.00
York	6	513	1,004.00	758.00
Total	59	4,958	$7,059.00	$8,011.00

Accounts and Reports for Year 1904.

SOCIETY FOR DISTRICT NO. 1, RESTIGOUCHE COUNTY.

President—W. W. Doherty, Campbellton.
Secretary-Treasurer—J. H. Taylor, Campbellton.

INCOME.

Subscriptions and donations (40 members),	$ 40 00	
Provincial grant,	138 00	
Other sources,	25 72	
		$203 72

EXPENDITURE.

Balance due Treasurer previous year,	$150 36	
Office rent,	10 00	
Allowance to officers,	12 47	
Treasurer Farmers' Institute,	10 00	
Other expenses,	4 00	
		$186 83
Balance,		$ 16 89

JOS. H. TAYLOR,
Treasurer.

REPORT.

The first part of the season was dry and hot; latter part very wet.

Hay an average. Grain crops light in every respect. Straw light, especially in oats. In some sections, wheat was fair. Roots a good crop in some sections. Fruit up to the average; not much raised.

The Society is in a fairly healthy condition, but the members do not take as much interest in it as is desirable.

JOS. H. TAYLOR,
Secretary.

SOCIETY FOR DISTRICT NO. 2, RESTIGOUCHE COUNTY.

President—John Barberie, Dalhousie.
Secretary-Treasurer—James E. Stewart, Dalhousie.

INCOME.

Balance from previous year, ...	$134 10	
Subscriptions and donations (35 members),.. ...	35 00	
Provincial grant,...	98 00	
Sale of stock,..	8 75	
Other sources,..	19 00	
		$294 85

EXPENDITURE.

Paid premiums, ...	$ 62 00	
Stock and expenses, ...	32 75	
Expenses of show,.	7 00	
Allowance to officers, ...	15 00	
Paid Treasurer Farmers' Institutes,.	8 75	
Other expenses, ...	1 30	
		$126 80
Balance on hand, ...		$168 05

J. E. STEWART,
Treasurer.

Note—A further subscription list will be required to entitle Society to a grant.

REPORT.

The general character of the past season was cold and wet. Hay an average, and saved in good condition. Wheat below the average. Oats an average. Buckwheat below the average, and damaged by early frosts. Potatoes a good average. Turnips below the average—no rot or blight. Apples an average; small fruit below.

The Society bought eight Yorkshire pigs this year; next year two or more bulls will be purchased. The usual fair was held, and proved very successful.

J. E. STEWART,
Secretary.

SOCIETY FOR DISTRICT N. 3, GLOUCESTER COUNTY.

President—P. J. Power, North Tetagouche.
Secretary-Treasurer—Wm. Rogers, Bathurst Village.

INCOME.

Balance from previous year,	$ 97 52	
Subscriptions and donations (73 members),	73 00	
Provincial grant,	106 00	
Sale of stock,	23 00	
Sale of seeds,	117 93	
Transferred from Farmers' Institute,	62 75	
		$480 20

EXPENDITURE.

Paid premiums,	$132 75	
Stock and expenses,	56 98	
Seeds and expenses,	117 91	
Expenses of show,	7 25	
Allowance to officers,	8 95	
Farmers' Institute,	18 25	
Other expenses,	7 08	
		$349 17
Balance on hand,		$131 03

WM. ROGERS,
Treasurer.

REPORT.

Hay very light all over the district; not half a crop. Grain not over half a crop. Potatoes extra good; turnips fair; carrots and beets good. Fruit fair; the late frosts of last spring caused some damage.

The Society purchased seeds and stock for the use of its members; but a great many of them manifest very little interest in the work, and do not try to be of any assistance.

WM. ROGERS,
Secretary.

SOCIETY FOR DISTRICT NO. 4, GLOUCESTER COUNTY.

President—N. R. Richey, New Bandon.
Secretary—Horace Hornbrook, New Bandon.
Treasurer—Thomas Dempsey, Stonehaven.

INCOME.

Balance from previous year,	$226 56	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	120 00	
Sale of stock,	31 25	
Sale of seeds,	311 14	
		$788 95

EXPENDITURE.

Stock and expenses,	$153 90	
Seeds and expenses,	347 78	
Allowance to officers,	12 00	
Farmers' Institute,	12 50	
Other expenses,	18 30	
		$544 48
Balance on hand,		$244 47

THOMAS DEMPSEY,
Treasurer.

REPORT.

May very wet and cold; June dry; showery fro mJuly to August. On 18th August this section was visited by a terrific hail storm, which destroyed the grain crop, leaving only twenty per cent. of the crop.

Hay about seventy-five per cent of a crop.

Potatoes a heavy crop, and housed in good condition. Turnips an average crop. Other roots an average.

The cultivation of fruit is gradually increasing. On a southern slope, or when well sheltered, fruit will grow and ripen well in this district.

Our cattle are showing a marked improvement. There are a few pure bred Holsteins, Durhams, and Ayrshires. Our sheep are a fine lot of highly-graded Leicesters, many of which are pure bred, with very long, fine wool. Our horses show the least improvement; they are principally the general purpose horse.

The operations of the Society are confined to the importation of pure bred cattle, sheep, and swine. We import yearly some fine Yorkshire and White Chester pigs, which give good satisfaction. We also buy the best registered Leicester rams we can get, and have so improved our sheep that visitors say they are the finest grade to be found in the Province.

The Society has been highly successful in importing yearly a quantity of seed grain of the best quality obtainable. This year we will be called upon to buy a double quantity, on account of the hail storm ruining the grain crop.

HORACE HORNBROOK,
Secretary.

SOCIETY FOR DISTRICT NO. 5, GLOUCESTER COUNTY.

No report received from this Society for last two years. Last officers reported were:

President—J. D. Foley, Pokeshaw.
Secretary-Treasurer—Stanislus Dumas, Grand Anse.
Balance on hand, $32.29.

SOCIETY FOR DISTRICT NO. 8, NORTHUMBERLAND CO.

President—John Betts, Millerton.
Secretary—J. J. Clarke, Millerton.
Treasurer—F. H. Jardine, Renous Bridge.

INCOME.

Balance from previous year, ...	$ 83 28	
Subscriptions and donations (100 members), ...	100 00	
Provincial grant, ...	122 00	
Sale of seeds, ...	142 45	
		$447 73
Carried forward, ...		$447 73

Brought forward,		$447 73

EXPENDITURE.

Paid premiums,	$115 50	
Seeds and expenses,	142 45	
Expenses of show,	17 30	
Allowance to officers,	15 00	
Expenses delegates F. & D. Ass., and Amherst Winter Fair,	42 50	
Farmers' Institute,	25 00	
Other expenses,	6 65	
		364 40
Balance on hand,		$ 83 33

F. H. JARDINE,
Treasurer.

REPORT.

The past season may be generally characterized as dry. Hay was not up to the average. Grain a very light crop; some fields hardly worth cutting. Roots and potatoes, however, gave large yields of excellent quality. Fruit in general was good, although plums were a failure.

The Society held a show of farm produce, stock, etc., at Pinedale Farm, Indiantown, on 6th of October. The exhibits were numerous and of average quality, showing that the members highly appreciate this feature of the work.

J. J. CLARKE,
Secretary.

SOCIETY FOR DISTRICT NO. 9, NORTHUMBERLAND CO.

President—Alex. G. Dickson, Chatham.
Secretary-Treasurer—Geo. E. Fisher, Chatham.

INCOME.

Balance from previous year,	$161 98	
Subscriptions and donations (135 members),	171 00	
Provincial grant,	135 00	
Other sources,	166 75	
		$634 73
Carried forward,		$634 73

Brought forward,		$634 73

EXPENDITURE.

Paid premiums,	$100 00	
Stock and expenses,	79 80	
Allowance to officers,	15 00	
Expenses delegates F. & D. Association,	10 00	
Treasurer Farmers' Institute,	33 75	
		238 55
Balance on hand,		$396 18

GEO. E. FISHER,
Treasurer.

REPORT.

May and June very favorable for putting in crops; July and August fair growing months; September fine; October cold; hard frost by 20th.

Hay an average yield on newly seeded land; on light soil only half a crop. Grain exceptionally good. Roots above the average. Potatoes good. Turnips a very heavy crop. Carrots, mangels, sugar beets good average.

Fruit an excellent crop.

During the past season a most successful exhibition was held on the grounds of the Exhibition Association. Exhibits from all parts of the country were made, which shows a greater interest is being taken in all lines of agriculture. The sending of expert judges by the Provincial Department of Agriculture is a good move; their excellent lectures in the ring were both interesting and instructive, as shown by the very large attendance when the horses and cattle were being judged. Our dairy instructors were very conspicous by their absence in this section, and an old-fashioned revival along this line would do a power of good. There are too many poor cows through the country, cows that do not pay their way six months of the year. Too many scrub bulls are allowed to run wild through the country, which is discouraging, and at times disasterous, to the breeders of pure bred stock.

The Clyde stallion, purchased from Robt. Ness & Son, was well patronized the past season.

GEO. E. FISHER,
Secretary.

SOCIETY FOR DISTRICT NO. 12, KENT COUNTY.

President—Francois O. Richard, McLeod's Mills.
Secretary-Treasurer—M. J. Poirer, St. Louis.

INCOME.

Balance from previous year,	$110 79	
Subscriptions and donations (83 members),	100 00	
Provincial grant,	120 00	
Sale of seeds,	271 23	
Other sources,	20 95	
		$622 97

EXPENDITURE.

Seeds and expenses,	$284 05	
Allowance to officers,	11 00	
Farmers' Institute,	20 75	
Bonus to mussel mud dredge,	202 00	
Other expenses,	4 40	
		522 20
Balance on hand,		$100 77

M. J. POIRER,
Treasurer.

REPORT.

Spring opened very cold and dry.

Hay not as good as the previous year, but an average crop, and housed in good condition.

Oats about forty per cent. less than last year. Wheat about half a crop. The farmers are taking their grain to the St. Charles mill for grinding and are getting first-class flour.

Potatoes a fair crop; turnips, average.

Apples, about the only fruit cultivated here, fell below the average.

The Society did not hold an exhibition this year, but devoted the money usually spent in this way to the purchase of a mussel mud dredge. The dredge was operated fifty days, and, as a result, 6,500 tons of mussel mud were spread on the farms of St. Louis and St. Ignace.

It is to be hoped that all who can will avail themselves of this cheap means of keeping up the fertility of their farms. The funds of the Society were never spent to better advantage.

M. J. POIRIER,
Secretary.

SOCIETY FOR DISTRICT NO. 13, KENT COUNTY.

President—Dr. I. W. Doherty, Rexton.
Secretary-Treasurer—John Jardine, Jardineville.

INCOME.

Balance from previous year, ...	$133 29	
Subscriptions and donations (67 members), ...	100 00	
Provincial grant, ...	120 00	
Other sources, ...	640 00	
		$993 29

EXPENDITURE.

Fertilizers, ...	$762 00	
Allowance to officers, ...	11 25	
Expenses delegates F. & D. Association, ...	14 00	
Treasurer Farmers' Institute, ...	16 75	
Other expenses, ...	7 25	
		811 25
Balance on hand, ...		$182 04

JOHN JARDINE,
Treasurer.

REPORT.

The past season was generally unfavorable for farming.

Hay was considerably below the average, caused by a drouth in the early part of the summer.

Wheat about half a crop. Oats not more than a quarter of a crop. Buckwheat a failure.

Potatoes first-class; turnips an average.

Apples an average crop. Plums not largely grown.

The Society held monthly meetings, and sent a delegate to the Farmers' and Dairymen's Association meeting in Fredricton.

A carload of fertilizer was imported; also a quantity of lime, and a cargo of limestone from Cape Breton.

The Society offered a bonus of $100 to any person who would travel a suitable stallion in the district, such stallion to be approved by a committee chosen by the Society. The offer was not accepted.

JOHN JARDINE,
Secretary.

SOCIETY FOR DISTRICT NO. 15, WESTMORLAND COUNTY.

President—James G. Wilbur, Shediac.
Secretary-Treasurer—Fred Inglis, Shediac.

INCOME.

Members fees collected,	$ 86 50	
Subscription list (121 members),	121 00	
Provincial grant,	120 00	
Sale of seeds,	399 53	
Other sources,	348 00	
		$1,075 03

EXPENDITURE.

Paid premiums for 1903,	$ 3 60	
Stock and expenses,	18 22	
Seeds and expenses,	499 97	
Allowance to officers,	14 79	
Other expenses,	335 49	
		872 07
Balance on hand,		$202 96

C. K. DICKIE,
Treas. for 1904.

SOCIETY FOR DISTRICT NO. 16, WESTMORLAND COUNTY.

President—Wm. Prescott, Baie Verte.
Secretary-Treasurer—J. R. Taylor, Little Shemogue.

INCOME.

Balance from previous year,	$160 31	
Subscriptions and donations (169 members),	169 00	
Provincial grant,	158 00	
Sale of stock,	117 00	
Sale of seeds,	303 26	
Other sources,	165 97	
		$1,073 54

EXPENDITURE.

Paid premiums,	$306 35	
Stock and expenses,	253 59	
Seeds and expenses,	309 71	
Expenses of show,	30 88	
Allowance to officers,	28 00	
Farmers' Institute,	42 25	
Other expenses,	67 41	
		1,038 19
Balance on hand,		$ 35 35

J. R. TAYLOR,
Treasurer.

REPORT.

The season opened fairly early; the weather bright and cold. June and July were exceedingly dry, being unfavorable for rapid vegetation.

Owing to the drouth there must be a serious shortage in all upland meadows in comparison with former years. Marsh lands, however, were excellent.

In grains there was a shortage in straw and considerabe rust, making quality and quantity below the average.

Potatoes fairly good. Turnips, in many cases, never recovered from the effect of the dry weather. Garden vegetables a failure, owing to the ravages of the cutworm, despite Paris Green and other remedies.

Wild fruits fairly plentiful. This is not an apple-growing district.

In cattle, the Shorthorns predominate. The Society invested in two Shorthorn bulls at the Maritime auction sale, in Amherst, and sold them at auction to members.

The tendency among our farmers is to raise the heavy draft horse, and leave the breeding of the roadster and trotter to our city brethern.

Our annual show was held on the Society grounds on 10th October. The day was disagreeable and wet. Notwithstanding, the exhibits, in comparison with former years, were fairly well maintained, and in the building and on the grounds there were evidences of improvement. The ladies department made up no small feature of the day, and gave abundant evidence of untiring energy and industry, combined with rare taste and skill. The pure bred stock, both beef and dairy, was not as conspicuous as should be. Sheep and swine were very good, but there was a small show of poultry. We are deeply indebted to Mr. R. Robertson for illustrated lectures in judging; also to many others, who, at no little inconvenience, and who on an unpleasant day, most willingly and gratuitously, came to our assistance as judges.

The *Maritime Farmer* was given to every member on our list in January, 1904, by the Institute.

J. R. TAYLOR,
Secretary.

SOCIETY FOR DISTRICT NO. 17, WESTMORLAND CO.

President—S. Edgar Dixon, Sackville.
Secretary—W. T. Goodwin, Sackville.
Treasurer—John T. Carter, Sackville.

INCOME.

Balance from previous year,	$ 8 41	
Subscriptions and donations (99 members),	238 04	
Provincial grant,	181 00	
Sale of seeds,	419 13	
Other sources,	2,383 21	
		$3,229 79

EXPENDITURE.

Paid premiums,	$ 745 20	
Seeds and expenses,	557 29	
Expenses of show,	117 09	
Allowance to officers,	40 00	
Expenses of delegates F. & D. Association,	24 00	
Farmers' Institute,	24 75	
Other expenses,	1,675 41	
		3,183 74
Balance on hand,		$ 46 05

JOHN T. CARTER,
Treasurer.

REPORT.

Again we have to report a cold, severe winter, with deep snows. A considerable quantity of lumber was gotten out, which brought good prices at the first of the season, but during the summer the market dropped, and it now brings $9 per thousand.

The prospects for grass opened bright, but drought during July and August stunted the growth so that the marshes yielded about half a crop. Uplands, however, gave better returns. Mixed hay was a fair crop. Good timothy brought $10 in the spring, but now commands only $9.25. Wheat was somewhat rusty. Early sown oats yielded a fair crop, and later sown gave good returns, the reverse of the usual yield. Barley and buckwheat fair. Potatoes good; turnips about three-quarters of a crop. The cutworm destroyed the turnip plants in some cases up to the third sowing. Gardens suffered in the same way, in some cases no vegetables maturing.

Beef brought good prices, from $8 to $10 up to August, when it dropped to $6 to $8. This drop in price was due to the great shortage in hay. There was the usual number of cattle fattened in the early part of the season, an industry which is gradually increasing. The Durham blood is becoming more infused into the common stock, and beef cattle are, therefore, of a higher order. Dairying, except in the home, is not much in evidence. Selling beef and hay is considered more profitable.

In horses, the Clydesdale blood is much sought after. We had three pure bred stallions travelling in this district last summer, and good prices are being offered for their stock. A number of horses, of no particular breed, were also soliciting patronage, but their get is not looked upon with much favor by the buyers. Many take quite an interest in trotting stock.

During the summer a cattle shed, 200 feet long by 25 feet wide, was erected on our Fair grounds, giving ample room for the cattle exhibited. Better accommodation for horses is needed before our buildings will be complete.

Our exhibition was held on the 5th and 6th of October, and again we were unfortunate in having bad weather. The first day was fine, and we had a good attendance, but the second day the continuous downpour of rain interfered with the anticipated large attendance. A glance at the exhibits showed an increase in some classes, while in a few there was an appreciable falling off. The ladies' fancy work, in the main building, showed a marked improvement. The merchants did not avail themselves to any great extent to exhibit their goods. The vegetables, in the annex, did not come up to the standard, owing to the failure in the garden crops. In cattle, sheep, and pigs the high standard was maintained. Poultry showed up well. The exhibit of horses was probably the largest seen here, some exceptionally fine colts being shown.

Owing to the unfavorable weather for the exhibition, the Society suffered financially, and it is now up to the members to be more persistent in their efforts for its success.

W. T. GOODWIN,
Secretary.

SOCIETY FOR DISTRICT NO. 18, WESTMORLAND CO.

President—Jos. R. Taylor, Taylor Village.
Secretary-Treasurer—Patrick T. Leger, Memramcook.

INCOME.

Balance from previous year, ...	$ 52 59	
Subscriptions and donations (90 members),.. ...	100 00	
Provincial grant,..	120 00	
		$272 59

EXPENDITURE.

Stock and expenses, ...	$203 75	
Allowance to officers,..	15 00	
Farmers' Institute, ...	22 50	
Other expenses, ...	5 00	
		246 25
Balance on hand, ...		$ 26 24

PATRICK T. LEGER,
Treasurer.

REPORT.

Spring opened early; the summer was generally cold; much more ploughing than usual was done.

Hay about seventy-five per cent. of a crop on the uplands; marsh hay about half a crop. Grains of all kinds about an average. Potatoes a very good crop. Fruit above the average.

The Society owns two pure bred bulls, and has bonused a number of pure bred animals, including several pure bred hogs.

PATRICK T. LEGER,
Secretary.

SOCIETY FOR DISTRICT NO. 20, WESTMORLAND CO.

President—Henry Colpitts, Petitcodiac.
Secretary—Harry Douglas, Petitcodiac.
Treasurer—C. F. Alward, Butternut Ridge.

INCOME.

Balance from previous year,	$114 07	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	120 00	
Sale of stock,	72 75	
		$406 82

EXPENDITURE.

Stock and expenses,	$168 25	
Allowance to officers,	14 63	
Farmers' Institute,	12 50	
Other expenses,	9 00	
		204 38
Balance on hand,		$202 44

C. F. ALWARD,
Treasurer.

REPORT.

Hay on the uplands below the average; on the intervales an average crop. Wheat considerably damaged by rust. Oats an average crop. Barley an average. Buckwheat good, where not struck with frost. Potatoes good. Turnips above the average. Other roots good. Apples good. Small fruit very plentiful.

Pure bred stock is getting quite plentiful in this district. Pure bred cattle are made up of Ayrshire, Holstein, and Shorthorn breeds. The thoroughbred horse, "Dracula," travels through our district, and some good colts may be seen as a result. There are also some trotting stallions available.

Instead of holding an exhibition, the Society expended its funds for the purchase of stock. Two Holstein bulls, one Ayrshire bull, two Shropshire rams, and one Yorkshire boar were purchased and sold to members. We also intended to purchase some Leicester rams and Berkshire pigs, but could not find any suitable.

HARRY DOUGLAS,
Secretary.

SOCIETY FOR DISTRICT NO. 21, KINGS COUNTY.

President—Lt.-Col. H. Montgomery Campbell, Apohaqui.
Secretary-Treasurer—C. W. Stockton, Sussex.

INCOME.

Balance from previous year, ...	$	12	
Subscriptions and donations (114 members), ...	260	00	
Provincial grant, ...	262	00	
Services of horse "Dracula,"	254	20	
Other sources, ...	5,052	50	
			$5,828 82

EXPENDITURE.

Paid premiums, ...	$ 789	05	
Paid on account "Dracula,"	262	00	
Grooms' accts., other expenses, ...	268	17	
Expenses of exhibition, ...	3,342	69	
Allowance to officers, ...	40	00	
Other expenses, ...	1,126	91	
			5,828 82

EDWIN B. BEER,
Treasurer for 1904.

REPORT.

Hay a light crop. Grain fair. Roots not up to previous years. Fruit fair, yield not large.

Ayrshires are still increasing; other breeds are holding their own. Some fine herds of grades are being produced by judicious breeding. The report of the live stock judges at our exhibition were very favorable; these reports are annexed hereto. Sheep and pigs remain about the same. No real improvement in sheep can be expected until the dog nuisance is grappled with. Swine is on the increase, and the pork packing establishment is doing good work. A canning factory has also been established at Sussex, and is doing a fair business. Each new industry will help the others.

The Society held an exhibition again this year, and have decided to hold another in 1905. It is well understood that these exhibitions are to be annual. The date of opening was later than last year, owing to other societies fixing upon our usual date, and, as no other arrangement could be had, our Society concluded to put our exhibition off one week. It is to be hoped a better understanding can be arrived at in future, to prevent clashing.

The exhibition, as a whole, can be considered nearly equal to last year. Some classes were better and others not up to the mark. This is caused by matters over which the Society has no control. It has tried always to make the exhibition self-sustaining, and in this the Society has been fairly successful; when all debts are collected, the deficit this year will amount to but a few dollars.

The services of the thoroughbred horse, "Dracula," are growing in favor, as his get are showing up fine.

The Society, through the Institute, held another Seed Fair in March last, which was quite successful. In addition to the seed department, there were lectures on horses, fruit and other branches of farming, also judging horses and cattle by points; all of which was very instructive. The Society is much indebted to the Dominion and Provincial Departments of Agriculture for the aid given.

EDWIN B. BEER,
Secretary.

REPORT OF DAIRY CATTLE AT THE SUSSEX EXHIBITION.

I beg leave to submit my report as follows: Grades were a fairly large class of excellent females, most of them of good dairy form and conformation, denoting quality and productiveness. Here was the best show of grades I have judged in the Province, and were brought out in splendid condition.

Ayrshires—A splendid class, mostly animals of splendid dairy conformation and type (especially the females). The bulls were an average lot; some of the young ones give promise of a future record. The class of aged cows was exceptionally good, all of them being of good constitution, of strong producing characteristics, splendid udders and good teats. To place the awards right in this class, called for a good deal of thought. The younger animals were also good with very few exceptions.

Guernseys were not quite as strong a class, but there were many good animals among them.

Jerseys were not a large class, but contained some good animals.

Holsteins —A small class of fairly good animals.

W. F. STEPHENS, Judge.

I beg to submit the following report of classes judged by me at the Sussex Exhibition, September 26th to 29th, 1904.

HOGS.

Berkshires—Good, but few in number.

Yorkshires—Some good specimens; the number not large.

Chester White—Fair; not largely represented.

I would suggest that the practice of showing sows with litters be abandoned if possible.

SHEEP.

Cotswolds—Fair; good specimens; coarse in wool—others off type.

Leicesters—Strong in their class; good specimens; not largely represented.

Shropshires—Not largely represented, nor good specimens.

Grades—Fair.

HEAVY HORSES.

The stallion classes—There were good horses, but almost no competition.

Brood Mares—Fair.

Colts—Fair.

Single Horses—Good specimens.

Draft Teams—Good, strong, useful horses, with good action.

On the whole, the show was better in quality of stock than in quantity. Would recommend that some money be spent in underdraining the grounds, even if it were taken out of the racing fund.

W. S. FRASER, Judge.

SOCIETY FOR DISTRICT NO. 22, KINGS COUNTY.

President—C. E. Dixon, Hampton.
Secretary-Treasurer—Jas. E. Hoyt, Hampton.

INCOME.

Balance from previous year,	$406 81	
Subscriptions and donations (94 members),	100 00	
Provincial grant,	121 00	
Sale of fertilizer,	176 00	
Sale of seeds,	450 00	
Other sources,	26 66	
		$1,280 47

EXPENDITURE.

Fertilizers and expenses,	$155 25	
Seeds and expenses,	407 69	
Interest,	68 00	
Allowance to officers,	12 00	
Maritime Stock Breeders' Association,	5 00	
Farmers' Institute,	22 50	
Other expenses,	48 26	
		718 70
Balance on hand,		$561 77

Balance consists of cash, book accounts, and seeds.

JAS. E. HOYT,
Treasurer.

REPORT.

Spring backward; summer cold and wet; weather very catchy, no succession of dry days or drought.

Hay not more than seventy-five per cent. of a crop. A considerable amount was winter killed. A great deal of low land hay was lost by high water in September.

Buckwheat a short crop, injured by fall frosts. Oats and barley fair.

Turnips and mangels that escaped the cutworm grew well and yielded heavy; but in a great many cases they were sown two or three times, and, of course, were light. Potatoes rotted badly, about twenty-five per cent. saved.

Fruit, on the whole, fair; some varieties good, others poor. There are very few in this section who cultivate an orchard.

In cattle there is a general mixture, mostly of the dairy breeds. There are some fine herds of dairy cattle, and a great improvement is noticeable the last few years.

We want an all-round horse here; there is not much use for heavy draft, and the trotter is of no use to a farmer. Breeding from a trotting stallion has injured our present stock.

During the past year the Society purchased a quantity of the best seed obtainable, as well as a quantity of fertilizer, which were sold to members. Each member was supplied with farming papers at a reduced rate, and as many as possible were induced to attend the Maritime Winter Fair, an arrangement for free admission of our members having been made with the management.

JAS. E. HOYT,
Secretary.

SOCIETY FOR DISTRICT NO. 23, KINGS COUNTY.

President—H. V. Dickson, Jubilee.
Secretary-Treasurer—O. W. Wetmore, Clifton.

INCOME.

Balance from previous year,	$ 55 29	
Subscriptions and donations (146 members),	221 00	
Provincial grant,	192 00	
Sale of stock,	88 28	
Sale of seeds,	261 61	
Fertilizers,	3,777 74	
		$4,595 92

EXPENDITURE.

Paid premium,	$186 35	
Stock and expenses,	179 67	
Seeds and expenses,	282 71	
Expenses of show,	28 22	
Allowances to officers,	20 65	
Fertilizers and expenses,	3,737 48	
Farmers' Institute,	36 50	
Other expenses,	83 56	
		4,555 14
Balance on hand,		$ 40 78

O. W. WETMORE,
Treasurer.

REPORT.

Cold and backward from early spring, which affected all kinds of tender crops. Very few really hot days during the summer. Generally, not a good growing season.

Hay a short crop; in some cases not much over half a crop. Nearly all farmers are short for feeding.

No wheat is grown in this district. Oats about two-thirds of a crop. Buckwheat about half a crop.

Where the seed was planted early, roots turned out very well; when planted late, a short crop. More turnips are grown than any other feeding root. Potatoes about half a crop, and of poor quality.

Apples about half a crop; small fruits plentiful.

The Society held an exhibition at Kingston, on October 12th. A large number attended, and the exhibition was generally successful, but a large number of fine stock was not shown. However, it was voted the best exhibition since 1898.

The Society again handled a large quantity of fertilizer; the raw material being purchased, and each member to do his own mixing.

Seeds were purchased, and gave general satisfaction, but it seems very hard to find a perfectly reliable seedsman. More clover is being sown each year, which is a step in the right direction.

Several young Ayrshire bulls and a very fine Guernsey yearling were purchased, also some Berkshire pigs. These were all sold to members. There is some good stock in the district, due to the various importations made by the Society.

O. W. WETMORE,
Secretary.

SOCIETY FOR DISTRICT NO. 26, CHARLOTTE COUNTY.

President—A. C. Poole, Pennfield Centre.
Secretary-Treasurer—Enos C. Justason, Pennfield.

INCOME.

Balance from previous year, ...	$ 62 09	
Subscriptions and donations (60 members), ...	100 00	
Provincial grant, ...	120 00	
		$282 09
Carried forward, ...		$282 09

Brought forward,		$282 09

EXPENDITURE.

Stock and expenses,	$ 50 00	
Allowance to officers,	22 00	
Farmers' Institute,	15 00	
Other expenses,	35 00	
		122 00
Balance on hand,		$160 09

ENOS C. JUSTASON,
Treasurer.

REPORT.

The past season was generally wet and disagreeable.

Hay not as good as last year. Grain one-third short of an average. Roots below the average. Fruit a failure.

We find it very hard to keep up the interest in the Society and retain the members unless a show is held yearly. This year no show was held, but at the annual meeting it was decided to hold one in Pennfield in 1905.

The members are well pleased with the Shorthorn bull bought last year, and which is still the property of the Society.

ENOS C. JUSTASON,
Secretary.

SOCIETY FOR DISTRICT NO. 27, CHARLOTTE COUNTY.

President—John Taggart, Bocabec.
Secretary—Patrick McLaughlin, St. George.
Treasurer—John W. Stevenson, Elmsville.

No business has been done by this Society for several years. The treasurer reports a balance on hand from previous year of $93.40, and the expenditure four cents for postage.

SOCIETY FOR DISTRICT NO. 29, QUEENS COUNTY.

President—Chas. L. Slip, Lower Cambridge.
Secretary—Frederick J. Purdy, Upper Jemseg.
Treasurer—John W. Foshay, Mouth of Jemseg.

INCOME.

Balance from previous year,	$137 59	
Subscriptions and donations,	12 00	
Provincial grant,	109 00	
		$258 59

EXPENDITURE.

Expenses delegate F. & D. Association,	$ 6 00	
Farmers' Institute,	6 00	
Other expenses,	4 00	
		16 00
Balance on hand,		$242 59

JOHN W. FOSHAY,
Treasurer.

Note—Mr. Foshay reports that it is likely no subscription list can be obtained this year.

REPORT OF SECRETARY FARMERS' INSTITUTE, NO. 29.

Lower Cambridge, Jan. 14, 1905.

To the President, Directors and Members of Cambridge Farmers' Institute, No. 29:

In presenting to you this, our third annual report, I wish to acknowledge, with gratitude, the help I have received from some of the officers and directors of the Institute, and also to the Commissioner for Agriculture and his Deputy for the interest taken in our welfare and practical assistance rendered.

Since our last annual meeting, three meetings were held for the discussion of agricultural subjects — where farmers could mingle together and discuss their success and failures. I think you will all agree with me that none of us are doing as well as we know how. We can tell others how they should carry on their farming operations, but we generally fail to put our teaching into practice; and a good many of us waste a good deal of time in trying to put into the ground in the spring far more seed than we can profitably care for and harvest.

A great many people will tell you that it is of no use for them to attend our Institute meetings, as it is impossible for them to carry out in practice the principles as laid down by the speakers, but I believe no one goes away from a meeting without having received some idea that would be of value to him in his work. The speakers cannot lay down fast rules for each individual; but if we understand the character of our soil and climate, and then sow and cultivate properly, we would receive far better results than we do under our slip-shod management.

The first meeting of the fall series was held in this house. The night was dark and disagreeable, and the attendance numbered only twenty-six. Owing to sickness, Mr. Anderson, who had been advertised to speak on the breeding of heavy horses, was unable to attend; but, thanks to the Commissioner for Agriculture and his Deputy, his place was filled by Mr. W. S. Fraser, of Gault, Ont.

I might say here that from 10th October to 15th of November, there were three parties of Institute speakers travelling throughout the Province, and over 100 meetings in all were held. The expenses of these meetings are largely paid for by the Provincial Department of Agriculture.

Our first meeting was called to order by the president, Mr. A. L. Hanselpacker, who, after a few preliminary remarks, called on Hon. L. P. Farris, Commissioner for Agriculture. Hon. Mr. Farris told of the Government's efforts to establish Illustration Orchards in each County of the Province. Personally, I think it to be regretted that the Government failed to secure a site for such an orchard somewhere in this section of the county. While I fail to see that it would be of any very great advantage to the possessor, yet it would afford a valuable object lesson to the neighborhood and the public, and many valuable points in regard to care, cultivation, and general management of an orchard would be brought out.

Mr. Fraser was introduced, and began by saying he had just visited the Illustration Orchard at Sussex, having been asked to do so by Deputy Commissioner Peters. He was very much pleased with all he saw. Since coming to New Brunswick he had carefully examined the different kinds of soil and the general makeup of the country, and had come to the conclusion that we could grow better fruit than Ontario. He was sorry to disappoint those who had come to hear an address on breeding heavy horses; but, if the meeting would allow him, he would speak on the clover problem. He spoke of crimson clover as being a very rapid grower, which supplied the land with a great deal of nitrogen; but it could not stand our cold winters. If the land could be got in good condition and well cultivated, so as to produce a good seedbed any time from the first to the middle of July, if sown then, it would grow from one foot to a foot and a half before danger of frost. Alsike is a far hardier variety, and will grow on damp, low lands better than the other sorts, but the small red is his favorite. It is a biennial, and does not amount to much after the second year, but would grow two good crops in a year. After it was allowed to run to seed, the life of that crop was done. Timothy hay is very exhausting to the land, and takes more out of it than a crop of oats. Timothy takes fertility out of the land, while clover adds fertility to it, fertility equal, per acre, to fifteen loads of barnyard manure. If that be true, and I do not suppose we are in a position to contradict the statement, don't you think it would pay to grow more clover and buy less expensive commercial fertilizers than we do? He advised all farmers to try and grow some alfalfa. It was hard at first to get a good stand on land where it had not been grown before. He advised at first to sow about 20 pounds to the acre, after the land becomes fertilized with it, much less seed will do. It will grow two good crops per season. He himself had grown three; he cut five tons of it to the acre in the three cuttings. It makes as good feed as timothy and bran together, and might well be called a balanced ration. It is a perennial, and will last longer in the land without seeding than timothy. He then gave some instructions as to cutting and curing. Clover should be cut when in full bloom, and never until the dew is thoroughly off. If it looks like rain the first day, put it in coils; but if fine, leave until the afternoon of second day.

Never put salt on clover in the mow; if any preservative has to be used, let it be a little air-slacked lime.

Mr. C. F. Alward was next introduced. He complimented Mr. Fraser on his excellent address, and proceeded to give his experience with the quick-curing method of clover. He cut it between noon and three o'clock the first day. The second day, after the dew was off, he stirred it over and put it in coils that night; the next day, without opening the coils, he hauled them in and tramped them solidly in the mow. He believed if he had put about a foot of hay or straw over the clover, and tramped it well down, everything would have been all right; as it was, only six inches near the top was mouldy, all the rest was in good condition.

Mr. Alward then took up the subject assigned to him—Pork Production. Pork production goes hand in hand with the dairy industry, and this Province is a dairy Province, taken as a whole. Last year New Brunswick imported $300,000 worth of pork, and exported only about $90,000 worth, a balance of over $200,000 on the wrong side. I think you will agree with me that farmers are not able to raise pork profitably at the prices paid for it last year—from five to six and a half cents by the carcass. Mr. Alward thought we could produce the bacon pig easier than the fat hog. Dealers say few people will buy fat pork at all these days. He told us not to despise whey for feeding pigs. If farmers can get from 70 to 90 cents per cwt. for their milk from the cheese factory, they could purchase something to mix with their whey for one-half the amount they got for their milk, and this would make better feed than skim milk. Either the Berkshire, Tamworth, or Yorkshire will give good results.

Mr. James McAlpine, and others, told of their methods of farming, and the meeting closed with the national anthem.

The next meeting was held at McDonald's Corner, on 11th October. In the absence of the president, the secretary took the chair.

Hon. Mr. Farris was present and spoke of the dairy interests. Our climate and surroundings are well suited for this industry; we have excellent pastures and water privileges.

He spoke of the work his department was doing in the way of establishing Illustration Orchards throughout the Province. It was the intention to give each county at least one orchard. They are under the supervision of his deputy, Mr. Peters, whose duty it is to visit each orchard frequently and see that the different requirements are complied with. He said that clean culture would be required until about the middle of July, when clover would be seeded to form a cover crop for the winter. Crimson clover is the best suited, because it makes more growth during the short season it has to grow than most other kinds.

Mr. Fraser spoke of manure, its care and application. It should always be hauled to the place intended as soon as possible after being voided by the stock and placed on the surface. In all our land there is a large amount of fertility locked up which can be made subserviant to us by proper treatment. The easiest, cheapest and best way to increase the fertility of our lands is to grow clover. It not only enriches the land, but makes the best feed for all kinds of stock, horses included.

Mr. Alward spoke on the raising of calves for dairy purposes. Farming is like all other occupations— not much fun in it unless you can make some money out of it. The calf should come from good dairy stock, such as Ayrshires, Jerseys, Guernseys, or Holsteins; then give them such food as will produce bone, muscle and growth, rather than fat. He would always raise them off the cow. Feed whole milk for the first three weeks, after that gradually diminish the new milk and substitute skim milk, with a little wheat bran, flax seed, or a little finely-ground oatmeal, scalded and added to the milk, not enough to give the calf scours. For the next month, feed ground oats daily in small quantities, after which feed regularly twice a day.

Mr. Alward said that Kings County was producing as much cheese as the rest of the Province together; to do that they must have good dairy cows, and to get good dairy cows you must begin with the calf.

Rev. A. B. McDonald gave a short talk on the benefits to be derived from a Farmers' Institute.

The chairman thanked the audience for their attention, and spoke of the advantages the Institute offered in the way of procuring agricultural papers at reduced rates.

The next meeting was held at The Narrows, on 12th October. I was very sorry that I was unable to attend this meeting. I fully intended going, but circumstances over which I had no control prevented my going. Mr. Peters sent me a copy of the report of the meeting sent in by the delegates. There was a large attendance, hall well heated and lighted, good attention was paid to what the speakers had to say. A number of questions were answered. Dr. McDonald told the audience that he had always pinned his faith to timothy hay, but if what Mr. Fraser had told them was true, and they were not in a position to prove otherwise, henceforth he would pin it to clover.

I think clover seems to be Mr. Fraser's hobby. He told me that it did not matter what subject he was assigned to speak on at the different meetings, he would still keep crying Clover, Clover, Clover, first and last, and if he could get only one farmer at each meeting to give clover a fair trial, he was certain his visit to the Province would be the means of doing much good.

At Lower Cambridge there were 26 persons present; at McDonald's Corner 79; and at The Narrows 96.

JOHN W. FOSHAY,
Secretary.

SOCIETY FOR DISTRICT NO. 34, YORK COUNTY.

President—John A. Campbell, M.P.P., Springhill.
Secretary—W. S. Hooper, Box 150, Fredericton.
Treasurer—J. W. McCready, Fredericton.

INCOME.

Balance from previous year,	$260 59	
Subscriptions and donations (211 members),	584 00	
Provincial grant,	175 00	
Other sources,	294 80	
		$1,314 39

EXPENDITURE.

Stock and expenses,	$152 00	
Expenses of show (1903 additional),	7 00	
Expenses delegates Maritime Winter Fair,	20 00	
Other expenses,	489 39	
		668 39
Balance on hand,		$646 00

J. W. McCREADY,
Treasurer.

REPORT.

Spring late and backward; summer dry and cold.

Hay much below the average, not more than a two-third crop, and in some localities not more than one-half the usual yield.

All grain crops below the average. Oats very light crop; straw light. Buckwheat very poor, injured by early frost. Not much wheat grown in this section. Barley below the average.

Potatoes an excellent crop in this section, but many rotted about digging time; in general, the crop was well up to the average. Turnips below the average. Carrots and beets about an average.

Season generally detrimental to fruit. In some sections, apples were good; but, on the whole, below the average. About half of the crop in some sections was lost when about half grown on account of the cold, dry weather. Small fruit about one-half the usual crop, and of inferior quality.

The swine imported by the Society in 1902 have borne excellent results. Some of the largest carcasses sold in the market this year were from this lot, one of them weighing 700 pounds.

The Society had under consideration the importation of pure bred sheep, but many of the members are of the opinion that until the dog nuisance is remedied, it would be a waste of funds.

An agreement was made with Mr. H. C. Jewett whereby members of the Society could have the use of his imported stallions at a reduction of $2 per service. Seventy-six members took advantage of the agreement, and are looking forward to good results.

No exhibition was held this year, but the executive have chosen September 21st to 27th as the date for our big fair in 1905, and are looking forward to a better and bigger show than we held in 1903.

W. S. HOOPER,
Secretary.

SOCIETY FOR DISTRICT NO. 35, YORK COUNTY.

President—M. W. Crotty, Stanley.
Secretary-Treasurer—D. J. Griffiths, Stanley.

INCOME.

Subscriptions and donations (52 members),.. ...	$102 00	
Provincial grant,..	146 00	
Rents and amount received from horse,..	647 13	
		$895 13

EXPENDITURE.

Due treasurer last account,..	$ 43 74	
Expenses of stallion, ...	263 93	
Paid premiums, ...	217 60	
Interest on mortgage,...	29 20	
Expenses of show,..	43 55	
Allowance to officers, ...	41 00	
Expenses delegate F. & D. Association,...	5 00	
Printing,..	14 77	
Farmers' Institute,.	13 00	
Paid on stallion, ...	146 00	
Other expenses, ...	72 79	
		900 58
Balance due treasurer, ...		$ 5 45

D. J. GRIFFITHS,
Treasurer.

REPORT.

The early part of the season was wet and cold, which made seeding late; some of the wet lands could not be planted till much later than usual. About the middle of June the weather changed, turning very dry, and by the middle of July the crops were burning up for want of rain.

Hay a poor crop, not more than sixty per cent. of an average.

Considerable wheat is raised in this section, but on account of the month of August being so dry, we had not more than fifty per cent. of an average. Oats about fifty per cent of an average. Buckwheat an average. Not much barley raised.

Potatoes an average crop, and of good quality.

A great many people experience considerable difficulty in raising turnips. Last year, on account of the grub, some fields had to be sown two or three times, and some had to be sown in grain. Some were fortunate to have fine crops, but, on the whole, it was not more than fifty per cent. of an average. Other roots are not grown to any extent.

Cattle in this district are made up of Holsteins, Jerseys, and Shorthorns, but we have not as yet ascertained which is the best.

Sheep are good, but could be improved by importing some new blood.

In pigs we have Chesters and Tamworths. As the demand here is for heavy pork for the lumber woods, the Chesters are taking the lead.

The horses of this district are of a better class than formerly, much pains having been taken in improving them. The Clydesdale stallion, purchased by the Society from the Government, has been and will be an untold benefit to the district.

The Society held a very successful exhibition on October 5th and 6th. The weather was all that could be desired. Cattle were not as large an exhibit as usual, but quality was good. Horses, sheep, and swine showed up better than for some years. Roots made a fine show. Domestic exhibits were the best in the history of the show.

Mr. Elliott, of Ontario, judged the horses and swine, and fully explained his reasons for placing each award.

On 11th and 12th of October Farmers' Institute meetings were held. These meetings were much appreciated; they are rapidly becoming very popular with our farmers.

After looking over the treasurer's account for this year, you will admit at once that the Society is in a prosperous condition.

D. J. GRIFFITHS,
Secretary.

SOCIETY FOR DISTRICT NO. 36, YORK COUNTY.

President—Albert E. Kilburn, Macnaquac.
Secretary—Joseph Hawkins, Douglas.
Treasurer—A. W. Ross, Douglas.

INCOME.

Balance from previous year,	$107 99	
Subscriptions and donations (31 members),	61 00	
Provincial grant,	100 00	
Other sources,	17 63	
		$286 62

EXPENDITURE.

Paid premiums,	$185 40	
Expenses of show,	23 11	
Allowance to officers,	10 00	
Farmers' Institutes,	7 75	
Other expenses,	8 00	
		234 26
Balance on hand,		$ 52 36

A. W. ROSS,
Treasurer.

SOCIETY FOR DISTRICT NO. 37, YORK COUNTY.

President—Peter Johnston, Millville.
Secretary—S. A. Jones, Millville.
Treasurer—Geo. M. Sleep, Upper Haynesville.

INCOME.

Balance from previous year,	$179 11		
Sub. list rec'd after acct. was published,	49 51		
		$228 61	
Subscriptions and donations (96 members),		101 00	
Provincial grant,		120 00	
			$449 61
Carried forward,			$449 61

Brought forward,		$449 61

EXPENDITURE.

Paid premiums,	$115 60	
Stock and expenses,	90 00	
Expenses of show,	15 00	
Allowance to officers,	12 00	
Farmers' Institute,	24 00	
Other expenses and bad debts,	164 80	
		421 40
Balance on hand,		$ 27 21

GEO. M. SLEEP,
Treasurer.

SOCIETY FOR DISTRICT NO. 38, YORK COUNTY.

President, Josiah Lawrence, Burden.
Secretary—J. W. Smith, Lower Prince William.
Treasurer—W. B. Barker, Kingsclear.

INCOME.

Balance from previous year,	$479 17	
Subscriptions and donations (36 members),	75 00	
Provincial grant,	92 00	
		$646 17

EXPENDITURE.

Paid premiums,	$166 25	
Expenses of show,	3 00	
		169 25
Balance on hand,		$476 92

W. B. BARKER,
Treasurer.

REPORT.

Spring opened fine, but backward weather delayed cropping.

The grass was a good deal winter killed, and hay proved to be a very light crop, not more than fifty per cent.

Oats a very light crop. In a good many cases they rusted badly; not more than twenty-five per cent. of last year's crop. Wheat not much sown. Barley about an average. Buckwheat very light, about half an average crop.

Potatoes an excellent crop, far in excess of anything we have had for a number of years. Turnips an average. Carrots and mangels below the average.

Apples an average. Plums and other small fruit almost a failure.

For the first time in five years the Society devoted its energies towards the holding of an exhibition. The weather was all that could be desired, and the attendance was large. The exhibits were excellent.

During the year four meetings were held for the transaction of business.

JARED W. SMITH,
Secretary.

SOCIETY FOR DISTRICT NO. 39, YORK COUNTY.

President—Walter Piercy, Jr., Coburn, via Harvey Station.

Secretary-Treasurer—Wm. McCulloch, Coburn, via Harvey Station.

INCOME.

Balance from previous year,	$ 54 97	
Subscriptions and donations (87 members),	81 04	
Provincial grant,	125 00	
Sale of stock,	7 00	
Sale of seeds and fertilizers,	625 07	
Other sources,	108 00	
		$1,001 08
Carried forward,		$1,001 08

Brought forward,		$1,001 08

EXPENDITURE.

Stock and expenses,	$104 95	
Seeds and expenses,	370 03	
Fertilizers,	400 06	
Allowance to officers,	10 00	
Farmers' Institute,	21 00	
Other expenses,	14 20	
		920 18
Balance on hand,		$ 80 90

JOHN T. CRAIG,
Treasurer for 1904.

SOCIETY FOR DISTRICT NO. 40, CARLETON COUNTY.

President—Milton J. Green, Green Road.
Secretary—B. D. Hoyt, McKenzie Corner.
Treasurer—J. R. Kirkpatrick, Debec.

INCOME.

Balance from previous year,	$ 36 93	
Subscriptions and donations (41 members),	97 00	
Provincial grant,	112 00	
Sale of seeds,	745 45	
Other sources,	91 50	
		$1,082 88

EXPENDITURE.

Seeds and expenses,	$896 72	
Allowance to officers,	25 00	
Delegate to Maritime Winter Fair,	10 00	
Farmers' Institute,	10 25	
Other expenses,	25 00	
		966 97
Balance on hand,		$ 115 91

J. R. KIRKPATRICK,
Treasurer.

REPORT.

The early part of the season was wet; June and summer months very dry; fall wet.

Hay below the average; wheat fair; oats short in straw, and heads not well filled; buckwheat about half a crop; potatoes very good; turnips fair.

Fruit not as good as usual.

We did not hold a show this year. A carload of seed and feed was imported and sold to members. Taking everything into consideration, the Society is in a very flourishing condition.

B. D. HOYT,
Secretary.

SOCIETY FOR DISTRICT NO. 41, CARLETON COUNTY.

President—Judson Briggs, Lindsay.
Secretary-Treasurer—C. L. Smith, Woodstock.

INCOME.

Subscriptions and donations (154 members),	$154 00	
Cash per Wm. Simonson,	300 00	
Cash per Gallagher Bros.,	125 00	
Cash from sales of seed,	12 39	
Provincial grant,	146 00	
Provincial grant for Seed Fair,	50 00	
		$787 39

EXPENDITURE.

Balance due treasurer,	$ 69 57	
Seeds,	124 31	
Secretary's salary,	75 00	
Other expenses,	498 95	
		767 83
Balance on hand,		$ 19 56

C. L. SMITH,
Treasurer.

REPORT.

This Society has been as active as ever during the past year. Another Seed Fair was held in Woodstock, which was a success and an improvement on the last. An exhibition was held in September, and without any Government grant. Over twelve hundred dollars were paid in prizes. The gate receipts more than paid the prize list, but fell short of paying the total expense. The exhibitions put up by this Society are creditable and highly profitable to the up-river counties. True, we do not have diving horses nor trained lions, but we do have what is far better, a good, clean, healthy agricultural and industrial fair, with sports and recreations in which the young men from the farm can join. It is the opinion freely expressed that in no part of the Province does the grants given by the Government for the help of exhibitions so fully meet the aims for which these grants are intended, namely the advancement of the agricultural interests, as they do here in Carleton County. This Society now owns land and buildings to the extent of over $6,000, and additions and improvements are being made from year to year.

C. L. SMITH,
Secretary.

SOCIETY FOR DISTRICT NO. 44, CARLETON COUNTY.

President—Wm. J. Owens, Tracy Mills.
Secretary—Julien E. Long, Long Settlement.
Treasurer—Henry T. Scholey, Centreville.

INCOME.

Balance from previous year,............	$ 28 80	
Sub. list rec'd after acct. was published (80 members),.................	80 00	
		$108 80
Carried forward,..........................		$108 80

Brought forward,	$108 80	
Subscription list (75 members),	166 50	
Donations building fund,	282 82	
Provincial grant,	109 00	
Special grant for exhibition purposes,	150 00	
Other sources (cash borrowed),	100 00	
		$917 12

EXPENDITURE.

Paid premiums,	$143 75	
Expenses delegate F. & D. Association,	7 35	
Other expenses, land, work, and building,	630 86	
		781 96
Balance on hand,		$135 16

HENRY T. SCHOLEY,
Treasurer.

REPORT.

Spring opened fine. Rather wet and cold during the cropping. Early part of the growing season was good, and grain looked well, but the weather turned cold, and during June and July crops did not advance as they otherwise would. Early fall frosts damaged grain and potatoes.

Hay about seventy-five per cent. of a crop, but saved in good condition. Wheat that ripened before the frost struck it, good. Oats good in quality, but a light crop. Buckwheat hardly up to the average, but better than last year. Potatoes a good crop, where they were properly sprayed and looked after. As high as 125 bushels were picked to the acre. Turnips a fair crop.

Duchess apples good; other varieties of apples very light. Small fruits an abundant crop.

On account of the expense incurred in purchasing land and putting up our exhibition building, no importation of stock was made this season. Our Society at its last annual meeting was unanimous in favor of the Government making another importation of Shorthorns and Holsteins, the Shorthorns having the preference.

On the land purchased, as before noted, the Society erected a two-story building, 24 by 60 feet, with stone foundation. It is not yet completed, but all debts in connection with it are paid. It is hoped to complete the work next year, and to meet the necessary expense in the same way as last year.

On October 3rd last we held our annual exhibition, which was pronounced by the public to be a very successful affair. Dinner and tea were furnished on the grounds, the material for which was supplied free. By this means we were able to pay the prize list.

JULIEN E. LONG,
Secretary.

SOCIETY FOR DISTRICT NO. 45, CARLETON COUNTY.

President—Geo. B. Reid, Glassville.
Secretary-Treasurer—W. A. Hanington, Glassville.

INCOME.

Balance from previous year,	$ 12 22	
Subscriptions and donations (60 members),	80 00	
Provincial grant,	109 00	
Sale of stock,	12 00	
Seeds and implements,	539 81	
		$753 03

EXPENDITURE.

Stock and expenses,	$ 19 15	
Seeds and expenses,	696 66	
Allowance to officers,	12 00	
Other expenses,	14 00	
		741 81
Balance on hand,		$ 11 22

W. A. HANINGTON,
Treasurer.

REPORT.

Hay below the average. Wheat an excellent crop, plump and good. Oats below the average; short in straw. Late-sown oats light in weight. Barley and buckwheat good. Potatoes a full crop. Turnips below the average, perhaps not more than half a crop. Fruit of all kinds abundant. There is no market for apples here, and we are uncertain as to their feeding value.

The Society imported a quantity of seed of the best quality, and resold to members at cost. Some choice pure bred Yorkshire pigs were imported and sold to members, with the restriction that they be held for stock purposes.

Circumstances, which we could not control, made this the hardest year in the history of the Society.

JOHN McLAUGHLAN,
Secretary for 1904.

SOCIETY FOR DISTRICT NO. 46, VICTORIA COUNTY.

President—James E. Porter, Andover.
Secretary—D. Wetmore Pickett, Andover.
Treasurer—Frank E. Henderson, Andover.

INCOME.

Balance from previous year,..................	$268 08	
Subscriptions and donations (59 members),......	59 00	
Provincial grant,..........................	100 00	
Sale of stock,............................	37 00	
Other sources,............................	200 00	
		$664 68
Carried forward,.........................		$664 68

Brought forward,		$664 68

EXPENDITURE.

Stock and expenses,	$262 00	
Allowance to officers,	14 80	
Expenses delegate F. & D. Association,	10 00	
Farmers' Institute,	14 75	
Other expenses,	322 29	
		623 84
Balance on hand,		$ 40 84

GEO. E. BAXTER,
Treasurer for 1904.

REPORT.

Spring opened late, but rather favorable for seeding. The early drought retarded the growth of crops.

Hay was not an average yield. Wheat a full crop. Oats very short, not more than eighty per cent. of an average. Buckwheat fair. Potatoes above the average, but rotted badly where the Bordeau Mixture was not used. Turnips missed a good deal, owing to a dry spell about planting time. Apples a full crop. Small fruit poor.

Of late years it has been the habit of the Society to invest its money in the purchase of stock, rather than in the holding of local shows. Under these circumstances, it is very hard to keep the membership up to the required standard, but we believe it to be the better course in the interest of the farmers.

FRANK E. HENDERSON,
Secretary for 1904.

SOCIETY FOR DISTRICT NO. 48, VICTORIA COUNTY.

President—John Brinkman, Salmonhurst.
Secretary-Treasurer—Anders J. Jensen, Salmonhurst.

INCOME.

Balance from previous year,	$ 30 83	
Subscriptions and donations (80 members),	100 00	
Provincial grant,	100 00	
Sale of stock,	37 20	
Sale of seeds,	86 98	
Other sources,	20 00	
		$375 01

EXPENDITURE.

Keep of stock,	$ 52 61	
Stock and expenses,	94 02	
Seeds and expenses,	96 83	
Allowance to officers,	14 77	
Farmers' Institute,	20 00	
Other expenses,	44 97	
		323 20
Balance on hand,		$ 51 81

ANDERS J. JENSEN,
Treasurer.

REPORT.

Spring late and wet; summer dry and cold; fair throughout harvest time and early fall.

Hay about an average. Wheat not as good as last year, owing to the wet spring. Oats an average. Apples a splendid crop.

The Society spent its funds principally in the improvement of live stock, as in former years. Since 1896 this Society has spent for that purpose no less than $2,400, an amount exceeded by only one Society in the Province, and that Society counts its membership in the hundreds.

ANDERS J. JENSEN,
Secretary.

SOCIETY FOR DISTRICT NO. 50, MADAWASKA COUNTY.

President—Paul Clavette, St. Basil.
Secretary—Theodule Martin, St. Basil.
Treasurer—Rev. L. N. Dugal, St. Basil.

INCOME.

Balance from previous year,	$ 44 62	
Subscriptions and donations (55 members),	110 00	
Provincial grant,	105 00	
Other sources,	05	
		$259 67

EXPENDITURE.

Paid premiums,	$124 45	
Expenses of show,	13 25	
Allowance to officers,	12 00	
Farmers' Institute,	12 00	
Three land rollers,	47 00	
Other expenses,	2 00	
		210 70
Balance on hand,		$ 48 97

REV. L. N. DUGAL,
Treasurer.

REPORT.

The general character of the past season was very wet, and not at all favorable for successful farming.

Hay a fair crop. Oats medium. Buckwheat not up to the average. Barley good. Wheat fair.

Apples fair. Plums poor.

The annual show was held on 12th October. The show of grain was fair, but roots and garden produce was exceptionally good. Horses and cattle were also good.

THEODULE MARTIN,
Secretary.

SOCIETY FOR DISTRICT NO. 51, ST. JOHN COUNTY.

President—Dr. T. Fred Johnston, St. John.
Secretary-Treasurer—R. R. Patchell, St. John.

INCOME.

Balance from previous year,	$ 45 35	
Subscriptions and donations (58 members),	150 54	
Provincial grant,	143 00	
Special grant,	150 00	
Sale of seeds,	118 00	
Other sources,	95 93	
		$702 82

EXPENDITURE.

Paid premiums,	$249 65	
Seeds and expenses,	118 00	
Expenses of show,	24 25	
Allowance to officers,	50 00	
Expenses delegates F. & D. Association,	5 00	
Farmers' Institute,	12 75	
Taxes, insurance, interest,	124 18	
Other expenses,	10 00	
		593 83
Balance on hand,		$108 99

R. R. PATCHELL,
Treasurer.

REPORT.

The past season was very backward and cold, and generally unfavorable.

Hay a light crop. Grain about an average. Roots fair. Early potatoes suffered from rust. Fruit but little grown.

The Society purchased and sold to the members a quantity of seed oats.

The usual show was held in the fall.

R. R. PATCHELL,
Secretary.

SOCIETY FOR DISTRICT NO. 52, ST. JOHN COUNTY.

President—Wm. T. Boyle, Golden Grove.
Secretary-Treasurer—Alex. F. Johnston, Upper Loch Lomond.

INCOME.

Balance from previous year,	$ 95 00	
Subscriptions and donations (44 members),	85 00	
Provincial grant,	117 00	
		$297 00

EXPENDITURE.

Paid premiums,	$150 20	
Expenses of show,	21 75	
Allowance to officers,	10 10	
Farmers' Institute,	11 00	
Other expenses,	15 00	
		$208 05
Balance on hand,		$ 88 95

ALEX. F. JOHNSTON,
Treasurer.

REPORT.

Spring opened late and very unfavorable for farming. The haying season was wet. The fall was open, and allowed the farmers to do a large amount of ploughing and other fall work.

The hay crop in this district was a small one, and was saved in fair condition. Not much old hay on hand.

Oats a fair crop. Not much wheat sown in this locality. Buckwheat below the average, and damaged by the frost at harvesting.

Turnips a good crop. In fact all roots, with the exception of potatoes, which were badly damaged by blight, turned out good.

Fruit is not raised here to a very large extent. Cultivating small fruit for the St. John market is about all the farmers go in for. But what apples are grown appear to do well.

We have the different breeds of pure bred cattle, but Ayrshires and Jerseys predominate. Some prefer one kind and some another, but all breeds are well represented.

In horses we have Clydesdales and Percherons, and the different breeds of trotting stock. I think the horses here will compare favorably with other localities.

In sheep we have the Leicesters, Cotswolds, and Shropshires, which are well suited to this country.

The Society held the usual annual fair and cattle show at Ben Lomond, but on account of bad weather it was not as well attended as usual. The exhibits were all that could be desired, and reflected great credit on the farmers.

The Society is now negotiating for some young stock, which will be a great benefit to the neighborhood.

ALEX. F. JOHNSTON,
Secretary.

SOCIETY FOR DISTRICT NO. 54, ST. JOHN COUNTY.

President—James Rourke, St. Martins.
Secretary—William Smith, St. Martins.
Treasurer—Michael Kelly, St. Martins.

INCOME.

Balance from previous year,	$ 34 68	
Subscriptions and donations (25 members),	58 00	
Provincial grant,	108 00	
Sale of stock,	6 00	
		$206 68
Carried forward,		$206 68

Brought forward,		$206 68

EXPENDITURE.

Paid premiums,	$ 71 86	
Stock and expenses,	20 00	
Expenses of show,	20 00	
Allowance to officers,	12 00	
Farmers' Institute,	6 25	
Other expenses,	15 47	
		145 58
Balance on hand,		$ 61 10

MICHAEL KELLY,
Treasurer.

REPORT.

The general character of the past season was too wet for the production of good crops. The hay crop fell about one-quarter short of last year. Grain and roots were poor, but fruit did very well.

Our herds are mostly made up of Jerseys, Ayrshires, and Holsteins. Horses are mostly Clydesdale.

The Society enjoyed a prosperous year, and we begin the season of 1905 with a gratifying increase in membership.

WM. SMITH,
Secretary.

SOCIETY FOR DISTRICT NO. 55, KINGS COUNTY.

President—F. W. C. Nase, Nerepis.
Secretary—D. M. Hamm, Grand Bay.
Treasurer—W. J. Usher, Grand Bay.

INCOME.

Balance from previous year,	$235 53	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	122 00	
Sale of stock,	27 50	
Other sources,	26 00	
		$511 03

EXPENDITURE.

Stock and expenses,	$187 75	
Allowance to officers,	7 00	
Farmers' Institute,	12 50	
Other expenses,	1 26	
		208 51
Balance on hand,		$302 52

W. J. USHER,
Treasurer.

REPORT.

The early part of the season was cold and backward. June too dry for the growth of crops.

Hay a very poor crop, one-third short of the average yield.

Grain of all kinds much below the average. Wheat is not grown very extensively, as there are no flour mills handy where it could be ground.

Potatoes were poor, being struck with rust early in August. Many farmers barely got seed enough for next year. Other roots fair.

Fruit a poor crop, but I am pleased to say the orchards are receiving more care and better cultivation every year.

The funds of the Society during the past year have been expended in the improvement of stock, and this rule seems to give general satisfaction.

It was decided at the last annual meeting to handle fertilizers next spring.

D. M. HAMM,
Secretary.

SOCIETY FOR DISTRICT NO. 56, ALBERT COUNTY.

President—R. A. Smith, Elgin.
Secretary-Treasurer—Geo. M. Killam, Elgin.

INCOME.

Balance from previous year,	$126 56	
Subscriptions and donations (46 members),	119 40	
Provincial grant,	155 00	
Other sources,	17 16	
		$418 12

EXPENDITURE.

Paid premiums,	$170 10	
Expenses of show,	17 22	
Allowance to officers,	12 00	
Improvements on hall,	58 03	
Farmers' Institute,	12 50	
Other expenses,	3 27	
		273 12
Balance on hand,		$145 00

GEO. M. KILLAM,
Treasurer.

REPORT.

The winter was extremely cold and wet, with high winds; spring cold and wet; summer cold; fall cold, with early frosts.

Hay was not half a crop, and quality poor.

Wheat not over half a crop. Considerable smut and rust in many cases. Oats very poor, and badly rusted, but a few farmers report a good crop. Buckwheat very light. The late-sown promised good, but the early frost interfered. Barley an average.

Potatoes an average. Turnips below the average. Carrots, beets, and onions very poor.

Apples an average; plums a failure; small fruit very good.

Besides holding our annual exhibition, the Society made a determined effort to complete the hall. Next year, however, we hope to complete this work.

The exhibition was fully up to previous occasions. Horses were present in large numbers, and made a good show. The show of cattle was not as large as usual, and, as a rule, they were thin in flesh. Sheep and poultry good. The show in the hall was good, there being a large exhibit of fruit and vegetables. There was a very good line of dairy products.

GEO. M. KILLAM,
Secretary.

SOCIETY FOR DISTRICT NO. 57, ALBERT COUNTY.

Account for 1903 not received in time for publication in last Report.

President—Joseph W. Turner, Harvey.

Secretary-Treasurer—Abner A. Reid, Upper New Horton.

INCOME.

Balance from previous year,	$189 58	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	113 00	
Sale of stock,	114 00	
		$516 58

EXPENDITURE.

Stock and expenses,	$275 35	
Allowance to officers,	10 65	
Farmers' Institute,	12 23	
Other expenses,	11 00	
		309 25
Balance on hand,		$207 33

ABNER A. REID,
Treasurer.

Report for 1904.

President—Joseph Keiver, Upper New Horton.
Secretary-Treasurer—Edgar Cannon, New Horton.

INCOME.

Balance from previous year,	$207 33	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	120 00	
Sale of stock,	148 75	
Other sources,	1 25	
		$577 33

EXPENDITURE.

Stock and expenses,	$357 00	
Expenses of show,	11 00	
Other expenses,	14 25	
		382 25
Balance on hand,		$195 08

ABNER A. REID,
Treasurer for 1904.

REPORT.

Hay below the average in this section, on account of the dry weather in June and July.

Grain below the average; late-sown grain very light.

Potatoes a good crop, somewhat affected by blight. Early-sown turnips a good crop; late-sown below an average.

Fruit is not grown to any extent in this district. Fruit of all kinds below the average, on account of the late frosts.

The Society continues to import pure bred Durham bulls and cows, with a view of improving the stock. Last fall we purchased one bull and three heifers, and in the spring it is the intention to add one or more bulls to the list.

ABNER A. REID,
Secretary.

SOCIETY FOR DISTRICT NO. 58, ALBERT COUNTY.

President—W. T. Wright, Hopewell.
Secretary-Treasurer—C. C. West, Hopewell Hill.

INCOME.

Balance from previous year,	$ 82 24	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	120 00	
		$309 24

EXPENDITURE.

Paid premiums,	$119 30	
Stock and expenses,	154 38	
Expenses of show,	13 64	
Allowance to officers,	10 00	
Farmers' Institute,	12 50	
Other expenses,	22 30	
		332 12
Balance due treasurer,		$ 22 88

C. C. WEST,
Treasurer.

SOCIETY FOR DISTRICT NO. 60, VICTORIA COUNTY.

President—W. L. McPhail, Bon Accord.
Secretary—John Ellis, Kincardine.
Treasurer—Alex. Philip, Upper Kintore.

INCOME.

Subscriptions and donations (54 members),	$ 61 05	
Provincial grant,	101 00	
Transferred from Farmers' Institute,	13 50	
Other sources,	1 83	
		$177 38
Carried forward,		$177 38

Brought forward,		$177 38

EXPENDITURE.

Balance due treasurer last account,	$ 15 41	
Paid premiums,	47 70	
Expenses of show,	13 25	
Allowance to officers,	7 75	
Expenses delegates F. & D. Association,	8 00	
Treasurer Farmers' Institute,	13 50	
Other expenses,	2 38	
		107 99
Balance on hand,		$ 69 39

ALEX. PHILIP,
Treasurer.

REPORT.

Spring opened early but cold, and was unfit for seeding until well into May. Summer favorable for all kinds of crops until early fall frosts set in, damaging buckwheat and all late grain.

Hay a good average crop, stored in good condition.

Oats a good color, but light in weight.

Potatoes an extra crop of good quality, but rotted badly in some sections.

Apples above the average, trees badly broken down with weight of fruit.

The cattle most in favor in this district are the Shorthorns. There are also a few Ayrshires. In horses, the Clydesdales take the lead.

Our exhibition was held on 14th October. The show of horses was well worth seeing; the cattle, although not as numerous as in some past years, were of superior merit. There was also a good showing of sheep. An excellent display of roots and fruit, but grain not as good as usual.

The Society endeavors to have a good supply of pure bred bulls and rams for the improvement of stock in the district all the time.

JOHN ELLIS,
Secretary.

SOCIETY FOR DISTRICT NO. 61, SUNBURY COUNTY.

President—H. H. Smith, Blissville.
Secretary—J. S. Hayward, Central Blissville.
Treasurer—J. F. Duplisea, Central Blissville.

INCOME.

Balance from previous year,	$ 85 31	
Subscriptions and donations (61 members),	61 00	
Provincial grant,	98 00	
Sale of stock,	14 00	
Sale of seeds,	153 32	
Other sources,	26 82	
		$438 45

EXPENDITURE.

Stock and expenses,	$ 86 20	
Seeds and expenses,	176 16	
Allowance to officers,	12 00	
Farmers' Institute,	15 00	
Other expenses,	47 08	
		336 44
Balance on hand,		$102 01

F. DUPLISEA,
Treasurer.

REPORT.

Spring wet, followed by very dry weather during June and July, but cold throughout the season. Autumn quite unfavorable for farm work.

Highland hay from one-half to two-thirds of an average. Lowland hay fully up to the average. Grain a light crop. Roots a good average. Fruit of all kinds light.

Quite a large quantity of grass seed was handled during the past year, with satisfactory results. The result of the efforts of the Society along the line of stock improvement is quite noticeable.

J. S. HAYWARD,
Secretary.

SOCIETY FOR DISTRICT NO. 62, NORTHUMBERLAND CO.

President—Rev. M. F. Richard, Rogersville.
Secretary-Treasurer—Fidele Richard, Rogersville.

INCOME.

Balance from previous year,	$131 28	
Subscriptions and donations (52 members),	105 00	
Provincial grant,	125 00	
Sale of seeds,	351 12	
		$712 47

EXPENDITURE.

Paid premiums,	$ 45 75	
Stock and expenses,	48 00	
Seeds and expenses,	351 19	
Expenses of show,	16 00	
Allowance to officers,	20 00	
Farmers' Institute,	13 00	
Other expenses,	18 87	
		512 81
Balance on hand,		$199 66

FIDELE RICHARD,
Treasurer.

REPORT.

Hay much below the average. Oats, wheat, buckwheat and all grains almost a complete failure. Wheat almost invariably turns out well, but this year failed miserably. Potatoes a very fair crop. Turnips and other roots good. Fruit an inferior crop.

Much interest is being taken in the chicken fattening industry, due to the establishment of the fattening station by the Dominion Department of Agriculture.

The Society is being kept up with difficulty. At the last meeting the president made a strong appeal, and succeeded in arousing some interest. Resolutions were passed recommending the re-opening of the butter and cheese factory next summer. It is proposed to operate the factory all next season.

We will have to import wheat and oats for seed in the spring.

The Government is opening up a new road to Chatham, which will enable the farmers to reach Chatham much easier and quicker.

Rogersville would develop rapidly if the Government would allow *bona fide* settlers to have the land held by licensees, which the Government seems unwilling to disturb. Public domains should not be exclusively controlled by trusts and corporations. Natives, willing to settle upon public lands, should be encouraged in their patriotic endeavors, and not refused.

FIDELE RICHARD,
Secretary.

SOCIETY FOR DISTRICT NO. 63, YORK COUNTY.

President—J. C. Murray, Kingsclear.
Secretary—John A. Campbell, Spring Hill.
Treasurer—P. C. Powys, Fredericton.

Balance on hand, Dec. 31, 1899, $214.01.
No business done since that date.

SOCIETY FOR DISTRICT NO. 65, MADAWASKA COUNTY.

President—Hector D'Aigle, Michaud.
Secretary—Honore Cyr, St. Hilaire.
Treasurer—Pierre Collin, Albertine.

INCOME.

Balance from previous year, ...	$125 23	
Subscriptions and donations (75 members),.. ...	75 00	
Provincial grant,..	109 00	
Sale of seeds,..	184 33	
		$493 56
Carried forward, ...		$493 56

Brought forward,		$493 56

EXPENDITURE.

Paid premiums,	$ 96 60	
Seeds and expenses,	184 33	
Expenses of show,	8 00	
Allowance to officers,	9 20	
Other expenses,	19 00	
		317 13
Balance on hand,		$176 43

PIERRE COLLIN,
Treasurer.

REPORT.

An exhibition was held in October. The exhibits were good, but not so large as in former years. The only other business done was the purchase of grass seed. Owing to the bad season, which damaged the crops, good seed will be scarce next spring. The dairy industry has not been as profitable as last year. In general, the result of the year's operations was not as good as 1903. Early frost caused serious loss; still it is to be hoped that the wants of our people will be met. It was feared that the lumber business would be very small in the fall of 1904, but it proved fair enough. Our people are depending upon this industry to a very large extent, and had operations been curtailed, much hardship would have resulted. We thank the Almighty for always giving means to avoid the hardships that are the lot of many other places.

HONORE CYR,
Secretary.

SOCIETY FOR DISTRICT NO. 66, KENT COUNTY.

President—John McKee, McKee's Mills.
Secretary-Treasurer—Dr. D. V. Landry, Buctouche.

INCOME.

Balance from previous year,	$101 69	
Subscriptions and donations (125 members),	125 00	
Provincial grant,	134 00	
		$360 69

EXPENDITURE.

Paid premiums,	$125 00	
Other expenses,	2 91	
		127 91
Balance on hand,		$232 78

D. V. LANDRY, M.D.,
Treasurer.

REPORT.

Spring rather late and cold. Seeding time fine and dry. In fact, the entire season was exceptionally dry.

Hay a poor crop, but what there was of it was saved in good condition.

Grain poor, both in yield and quality—not more than half a crop.

Potatoes good; other roots fair

Fruit good.

The Society is not doing very much just at present, except importing a limited quantity of seeds, which are sold to members. We are allowing the funds to accumulate.

D. V. LANDRY, M.D.,
Secretary.

SOCIETY FOR DISTRICT NO. 67, YORK COUNTY.

President—F. R. Brooks, Grand View.
Secretary-Treasurer—F. C. Brown, Middle Southampton.

No report received.
Balance reported on hand 30th Nov., 1903, $48.35.

SOCIETY FOR DISTRICT NO. 68, GLOUCESTER COUNTY.

President—Rev. J. T. Allard, Caraquet.
Secretary-Treasurer—J. E. Lanteigne, Caraquet.

INCOME.

Balance from previous year,	$ 51 22	
Subscriptions and donations (100 members),	100 00	
Provincial grant,	120 00	
Sale of seeds,	437 07	
Balance of Farmers' Institute funds,	25 00	
		$733 29

EXPENDITURE.

Paid premiums,	$100 00	
Seeds and expenses,	478 91	
Allowance to officers,	11 00	
Other expenses,	3 60	
		593 51
Balance on hand,		$139 78

J. E. LANTEIGNE,
Treasurer.

Note—Farmers' Institute accounts included in above.

REPORT.

The past season was very dry, which was unfortunate, as our soil is naturally light and sandy.

Hay far below the average. Oats a fair crop, but short straw; wheat a failure. Potatoes the highest crop on record. Turnips an average.

Fruit proved a complete failure this season, due to the excessive cold of last winter, which destroyed the buds and killed many trees.

It was our intention to import some Chester pigs and an Ayrshire; but, as long as the law relating to the running at large of scrub bulls is not enforced, there seems to be very little inducement to keep good stock.

J. E. LANTEIGNE,
Secretary.

SOCIETY FOR DISTRICT NO. 69, KINGS COUNTY.

President—Wm. Jamieson, Hillsdale.
Secretary—James Payne, Hillsdale.
Treasurer—John Jamieson, Clover Hill.

INCOME.

Balance from previous year,	$142 08	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	120 00	
		$362 08

EXPENDITURE.

Paid premiums,	$164 15	
Expenses of show,	32 60	
Allowance to officers,	10 00	
Farmers' Institute,	12 50	
Other expenses,	5 00	
		224 25
Balance on hand,		$137 83

JOHN JAMIESON,
Treasurer.

REPORT.

The early spring was rather wet and cold; toward the last of May the weather came in fine, and continued so until about the middle of August; from that until the last of October scarcely a week passed without heavy rains.

Hay was the lightest crop in many years. Scarcely any farmer in this vicinity has an average crop, and many are even a half short of the usual amount.

Grains were good. Oats considerable above the average, somewhat damaged by frost, but what escaped was the best in many years. Very little wheat is grown in this section, but what there was proved very good.

Roots a good average crop.

Fruit below the average.

In pure bred cattle Ayrshire predominate. They are general favorites, and seem well adapted to the needs of the farmers. There are a few pure bred Jerseys, but they are not increasing or gaining in popularity.

In sheep we have some pure bred Leicesters and Shropshires, but as a rule there is very little interest taken in sheep raising, not nearly as much as in times past. The farmers are now mostly inclined to the dairying industry, which, to my mind, has done more to further the interests of the people than any industry that has been undertaken.

Our swine are a mixture of Chesters, Yorkshires, and Berkshires.

In horses we have not any pure bred animals to speak of, although we have quite a number of good, serviceable horses for general purposes.

Our Society held an exhibition on 11th October. There was quite an exhibit of roots and sundries, but not as much stock put in an appearance as on former occasions. Among the lot, however, were six pure bred Ayrshire bulls, all fairly good animals. There was also exhibited some fine females of that breed. It is the intention of the Society to purchase some pure bred stock in the near future.

JAMES PAYNE,
Secretary.

SOCIETY FOR DISTRICT NO. 70, QUEENS COUNTY.

President—S. L. Peters, Queenstown.
Secretary—J. W. Dickie, Gagetown.
Treasurer—A. P. Slipp, Upper Hampstead.

Note—No business done the last two years, and no subscription list received for the present year.

Balance on hand, $108.07.

A. P. SLIPP,
Treasurer.

SOCIETY FOR DISTRICT NO. 71, NORTHUMBERLAND CO.

President—Edward Mersereau, Blissfield.
Secretary—Ronald Hurley, Gilks.
Treasurer—Enoch Bamford, Gilks.

INCOME.

Balance from previous year,	$ 22 34	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	122 00	
Sale of stock,	55 00	
Sale of seeds,	91 99	
		$391 33

EXPENDITURE.

Paid premiums,	$ 88 40	
Stock and expenses,	106 75	
Seeds and expenses,	117 62	
Expenses of show,	11 55	
Allowance to officers,	14 00	
Expenses delegate F. & D. Association,	5 00	
Farmers' Institute,	12 50	
Other expenses,	15 00	
		370 82
Balance on hand,		$ 20 51

ENOCH BAMFORD,
Treasurer.

REPORT.

Spring opened cold and wet, and continued so until last of May. Conditions for farming were very unfavorable.

Hay one-third of a crop; wheat and buckwheat very poor; roots good. Very little fruit grown.

Since my last report the Society has imported a lot of timothy, clover and turnip seed. Also a Holstein bull, and a Shorthorn bull, which were sold to members. We fully appreciate the benefit of good stock, and intend to make a further importation next year.

Our annual show was held on 4th October. The exhibits were good, and the attendance very satisfactory.

RONALD HURLEY,
Secretary.

SOCIETY FOR DISTRICT NO. 72, WESTMORLAND COUNTY.

President—Edwin Charters, Chartersville.
Secretary—D. D. Leger, St. Anselne.
Treasurer—LeB. D. Lockhard, Moncton.

INCOME.

Balance from previous year, ...	$945 90	
Subscriptions and donations, and bills receivable (800 members), ...	800 00	
Provincial grant, ...	506 00	
Sale of stock, ...	4 00	
Farmers' Institute grant, ...	15 00	
		$2,270 90

EXPENDITURE.

Stock and expenses, ...	$846 87	
Allowance to officers, ...	30 00	
Advertising F. I. meetings, ...	1 75	
Other expenses, ...	406 31	
		1,284 93
Balance on hand, ...		$ 985 97

LeB. D. LOCKHARD,
Treasurer.

REPORT.

The present season has been unfavorable to certain lines of crops raised in our locality.

On newly seeded ground hay was an average crop; on old sod land it was below the average.

Wheat was below the average, caused by the local rust.

Oats were also below the average; buckwheat a fair average, and also barley.

The root crops, of which potatoes are the principal, were over the average; turnips were also good, and others an average.

Fruits were one of the best crops for many years in our locality, which can be verified by the exhibits of Mr. Benj. Charters, of Chartersville, N. B., who, at the Winter Fair, at Amherst, N. S., carried first prize for the county on 12 varieties of apples, Mr. Charters being a member of our Society, and this being the second year in succession that apples from his orchard were awarded first prize. His exhibits of 1903, at the Winter Fair, at Amherst, N. S., were found to be of such a superior quality that the Government took charge of them for the St. Louis fair last year.

The culture of fruits has been very much improved since our Society has been established. The encouragement from the Farmers' Institute has stimulated the culture of fruits to such an extent that we will, in the near future, compare favorably with the growers of Nova Scotia. We have some of the best soil to grow fruit trees to be found in any section of the two Provinces. We expect from year to year to be able to give a good account of our fruit-raising in our Society.

It is still to be regretted that such a large society as Moncton and Fox Creek cannot make a showing in the dairy line, while we command cows second to none in the Maritime Provinces for dairy purposes. It would be impossible, owing to the demand for milk, and its high prices in the City of Moncton, to manufacture butter and cheese at a profit, such as is done in other localities.

While the Government has from time to time assisted in the manufacture of cheese, we had to close our cheese factory, as the pasturized milk factory, operated by Mr. G. R. Jones, at Moncton, calls for all the milk that it can get in the locality.

Our Society still continues to keep the breeding of pure bred cattle of the very best strains of Holsteins, Durhams, and Ayrshires. Yorkshire swine, of which we import from 10 to 12 heads annually, of the best obtainable in Canada, from such noted breeders as Parlee, of Sussex, N. B.; Barton & Sons, Welsford, N. B.; Rogers, of Woodstock, N. B.; and Brethour, of Ontario; also Leicester and Shropshire sheep.

In poultry we have Barred Plymouth Rock, Light Brahams, and White Leghorn.

The Society is still of the opinion that local exhibitions are not as profitable to the members as the purchasing of stock for the cash expended at the exhibitions.

Many of the Acadian people that some years ago left their farms in this locality to go to United States in manufacturing towns, are returning back to their farms, and have gone to work earnestly. We expect the next decade will show as much improvement in the Acadian census as has been shown in the last decade. Our young men seem to think that agricultural pursuits are as honorable as any other calling.

We would ask the Government to assist our locality and Society with the work of the Institute. A great deal of good has resulted from the meetings held amongst us.

DENIS D. LEGER,
Secretary.

SOCIETY FOR DISTRICT NO. 73, GLOUCESTER COUNTY.

President—Alex. D. Doucet, Beresford.
Secretary-Treasurer—B. H. Cormier, Elm Tree.

INCOME.

Balance from previous year,	$122 47	
Subscriptions and donations (58 members),	72 00	
Provincial grant,	107 00	
Sale of stock,	15 25	
Sale of seeds,	185 75	
Farmers' Institute,	35 25	
		$537 72
Carried forward,		$537 72

Brought forward,		$537 72

EXPENDITURE.

Paid premiums,	$112 25	
Stock and expenses,	56 98	
Seeds and expenses,	190 75	
Expenses of show,	11 00	
Allowance to officers,	9 20	
Farmers' Institute,	16 00	
Other expenses,	42 28	
		438 46
Balance on hand,		$ 99 26

B. H. CORMIER,
Treasurer.

REPORT.

Spring was rather dry; summer and fall favorable for farm operations.

Hay below the average, but saved in good condition. Oats a very light crop. Wheat fair. Potatoes and other roots good. Apples above the average.

The Farmers' Institute meetings, which are addressed by speakers sent by the Department of Agriculture, are well attended, and much interest is taken in them. It would be better, however, if the speakers sent could address their audiences in French.

B. H. CORMIER,
Secretary.

SOCIETY FOR DISTRICT NO. 74, KINGS COUNTY.

President—H. N. Raymond, Belleisle Creek.
Secretary-Treasurer—R. W. Menzie, Midland.

INCOME.

Balance from previous year,	$142 82	
Subscription and donations (50 members),	75 00	
Provincial grant,	105 00	
Sale of stock,	31 00	
		$353 82

EXPENDITURE.

Paid bonus pure bred stock,	$ 45 00	
Stock and expenses,	80 00	
Allowance to officers,	10 00	
Delegate to Winter Fair,	4 00	
Farmers' Institute,	12 50	
Other expenses,	20 00	
		171 50
Balance on hand,		$182 32

R. W. MENZIE,
Treasurer.

REPORT.

The wet spring delayed seeding operations. Haying also was late, but the crop was stored in an excellent condition. Harvest weather fair.

Hay considerably below the average, but of good quality. Oats about an average. Buckwheat below the average, damaged by early frosts.

Potatoes a fair crop, but in some sections damaged by rot. Turnips fair; other roots very good.

Apples good; other fruit is not raised here to any extent.

The Society did not hold an exhibition this year, but devoted the funds toward procuring stock for the use of members.

The Institute meetings are a great benefit to the farmers, and much valuable information is brought out.

R. W. MENZIE,
Secretary.

SOCIETY FOR DISTRICT NO. 75, NORTHUMBERLAND CO.

President—R. N. T. Underhill, Blackville.
Secretary-Treasurer—R. M. Grindlay, Blackville.

INCOME.

Balance from previous year,	$ 80 87	
Subscriptions and donations (55 members),	99 00	
Provincial grant,	127 00	
Sale of stock,	76 00	
		$382 87

EXPENDITURE.

Paid premiums,	121 10	
Stock and expenses,	124 10	
Expenses of show,	14 91	
Allowance to officers,	12 70	
Farmers' Institute,	13 75	
Other expenses,	11 35	
		297 91
Balance on hand,		$ 84 96

R. M. GRINDLAY,
Treasurer.

REPORT.

Hay an average. Grain a light crop. Roots average. Fruit light.

The Society has had a fairly successful year. The annual fair was held on October 4th, and was well attended. The exhibits generally were good.

R. M. GRINDLAY,
Secretary.

SOCIETY FOR DISTRICT NO. 76, VICTORIA COUNTY.

President—Alex. Walker, Tilley.
Secretary—J. F. Tweeddale, M.P.P., Arthurette.
Treasurer—Chas. Roberts, Red Rapids.

INCOME.

Balance from previous year,	$167 41	
Subscriptions and donations (71 members),	71 00	
Provincial grant,	104 00	
Sale of stock,	81 42	
		$423 83

EXPENDITURE.

Stock and expenses,	348 50
Balance on hand,	$ 75 33

CHAS. ROBERTS,
Treasurer.

SOCIETY FOR DISTRICT NO. 77, MADAWASKA COUNTY.

President—J. Augure Bernier, Edmundston.
Secretary-Treasurer—J. B. Michaud, Edmundston.

INCOME.

Balance from previous year,		$682 65	
Subscriptions and donations (68 members),		68 00	
Provincial grant,	$120 00		
Farmers' Institute grant,	15 00		
		135 00	
Other sources,		25 75	
			$911 40
Carried forward,			$911 40

Brought forward,		$911 40

EXPENDITURE.

Paid premiums,	$223 55	
Expenses of show,	19 75	
Other expenses,	12 25	
		255 65
Balance on hand,		$655 85

PIUS MICHAUD,
Treasurer for 1904.

Note—Farmers' Institute account included in above.

REPORT.

The season was very rainy, which prevented the wheat reaching its usual average. Hay poor, too much rain. Rain and frost interfered with the oat crop, oats being only fair. Buckwheat poor. Potatoes and other roots good. Fruit good.

The Society held an exhibition this fall, which, although generally considered very good, was not up to last year's. Rain interfered with the attendance. Exhibits in all classes were creditable, roots and cattle showed up particularly well.

PIUS MICHAUD,
Secretary for 1904.

SOCIETY FOR DISTRICT NO. 78, VICTORIA COUNTY.

President—Walter Warnock, Grand Falls.
Secretary-Treasurer—James Watson, Grand Falls.

INCOME.

Balance from previous year,	$157 29	
Subscriptions and donations (63 members),	63 00	
Provincial grant,	110 00	
Sale of stock,	39 90	
Sale of seeds,	9 28	
		$379 47

EXPENDITURE.

Stock and expenses,	$154 18	
Allowance to officers,	10 00	
Farmers' Institute,	13 00	
		177 18
Balance on hand,		$202 29

JAMES WATSON,
Treasurer.

REPORT.

The winter of 1904 was exceptionally cold; spring wet and backward; summer wet; haying and harvesting weather catchy.

Hay an average on lands in good state of cultivation.

Oats a very light crop, owing to the wet season and early frosts. Wheat good when sown early. Buckwheat a light crop.

Potatoes an average in yield and quality. Turnips and other roots fair.

Apples and other fruit a good average.

The Society has been devoting its funds toward the betterment of the stock in the district, with marked results. Some seed wheat and rape were imported and sold to members. Although realizing the great benefit it is to them, the farmers do not take a proper interest in the Society.

JAMES WATSON,
Secretary.

SOCIETY FOR DISTRICT NO. 79, RESTIGOUCHE COUNTY.

President—E. McMillan, Black Point.
Secretary-Treasurer—S. Laughlan, Black Point.

INCOME.

Balance from previous year,	$ 6 35	
Subscriptions and donations (60 members),	60 00	
Provincial grant,	98 00	
Sale of stock,	15 00	
		$179 35

EXPENDITURE.

Paid premiums,	$ 83 50	
Expenses of show,	8 50	
Allowance to officers,	15 00	
		$107 00
Balance on hand,		$ 72 35

S. LAUGHLAN,
Treasurer.

REPORT.

Spring early and wet; summer and autumn dry.

Hay about half usual crop. Grain less than half average crop. Roots above the average, and of good quality. Fruit fair.

The Society held a local show on 8th September, which was a great success. The day was fine and the attendance good.

S. LAUGHLAN,
Secretary.

SOCIETY FOR DISTRICT NO. 80, RESTIGOUCHE COUNTY.

President—Rev. John Wheten, Balmoral.
Secretary—D. A. Arseneau, Balmoral.
Treasurer—Hon. C. H. LeBillois, Dalhousie.

INCOME.

Balance from previous year, ...	$ 99 05	
Subscriptions and donations (61 members),... ...	64 00	
Provincial grant,..	198 00	
Sale of stock,..	19 00	
Farmers' Institute grant, ...	15 00	
		$395 05

EXPENDITURE.

Stock and expenses, ...	$154 38	
Seeds and expenses, ...	8 80	
Advertising F. I. meetings,..	1 35	
Other expenses, ...	25	
		164 78
Balance on hand, ...		$230 27

CHAS. H. LABILLOIS,
Treasurer.

Note—Farmers' Institute account included in above.

REPORT.

Hay an average crop. Grain below the average. Roots an average. Potatoes exceptionally good. Fruit an average.

No difficulty was experienced in getting farmers to subscribe to the Society this year, which is an indication of the increasing interest being taken in its work. The Society will continue to import pure bred stock, and will furnish members with superior seed. It will also advocate the raising of poultry, and will urge upon the department the desirability of locating an Illustration Orchard in this section, as our conditions are well adapted for fruit raising. The Society is also urging the establishment of a cheese factory.

D. A. ARSENEAU,
Secretary.

SOCIETY FOR DISTRICT NO. 81, NORTHUMBERLAND CO.

President—Henry Swim, Doaktown.
Secretary—Wm. Murray, Doaktown.
Treasurer—Wm. Whyte, Doaktown.

INCOME.

Balance from previous year,	$258 25	
Subscriptions and donations (50 members),	100 00	
Provincial grant,	120 00	
Sale of stock,	25 00	
Sale of seeds,	37 18	
		$540 43

EXPENDITURE.

Paid premiums,	$ 83 75	
Stock and expenses,	68 65	
Seeds and expenses,	37 09	
Expenses of show,	22 20	
Allowance to officers,	15 00	
Expenses delegate F. & D. Association,	5 00	
Farmers' Institute,	12 50	
Other expenses,	75	
		244 94
Balance on hand,		$295 49

WILLIAM WHYTE,
Treasurer.

REPORT.

Spring opened wet and cold; summer dry and windy, with no rain to speak of for nearly six weeks.

Hay below the average. The uplands were very short, but quite a fair crop was taken off the intervales.

Grain, in some places, up to the average, but in most places far below. The straw was very short.

Potatoes very good in most places. The bugs did not bother them to any extent last season. Turnips about an average.

Fruit well up to the average.

A pure bred Clydesdale horse was purchased by a private individual, and if he proves to be all right, will no doubt be well patronized.

This Society holds a show every fall, but it has been found a very hard matter to induce the farmers to take a proper interest in the use of pure bred stock.

WM. MURRAY,
Secretary.

SOCIETY FOR DISTRICT NO. 82, WESTMORLAND COUNTY.

President—Thos. L. Gallant, Barachois.
Secretary—Mathais Arseneau, Upper Abougagan.
Treasurer—Rev. E. N. Massey, Barachois.

INCOME.

Balance from previous year, ...	$165 45	
Subscriptions and donations (102 members),. ...	102 00	
Provincial grant,..	123 00	
Sale of stock,..	50 00	
Farmers' Institute grant, ...	15 00	
Other sources,..	13 30	
		$468 75

EXPENDITURE.

Stock and expenses, ...	$196 35	
Allowance to officers, ...	8 00	
Farmers' Institute, ...	15 00	
Other expenses, ...	2 50	
		208 35
Balance on hand, ...		$260 40

REV. E. N. MASSEY,
Treasurer.

REPORT.

Hay about two-thirds of an average crop. Wheat poor. Oats and barley an average. Buckwheat fair. Potatoes and turnips good, although in most places turnips had to be sown twice, as the insects destroyed the first sown seed. Fruit an average.

We did not import any seed last season, for the reason that we cannot get real clean seed. We think we have enough bad weeds in our district without getting more. The Dominion Government would assist the farmers very much if they would see to it that none but clean seeds are put on the market. It is very costly and troublesome to get rid of the weeds once they obtain a foothold, such as wild mustard, which is very common along our shore.

The Society purchased three very fine Durham bulls, three years old. These were resold to members, under certain conditions, for breeding purposes. We also imported six fine Yorkshire boars, which will be kept in the district for breeding purposes.

MATHIAS ARSENEAU,
Secretary.

SOCIETY FOR DISTRICT NO. 83, CARLETON COUNTY.

President—Wm. C. Rideout, Middle Simonds
Secretary—Wm. N. Raymond, Middle Simonds.
Treasurer—S. E. Colwell, Middle Simonds.

INCOME.

Balance from previous year,..........	$233 25	
Subscriptions and donations (30 members),......	60 00	
Provincial grant,..........	108 00	
Sale of seeds,..........	557 16	
Farmers' Institute grant,..........	15 00	
		$973 41
Carried forward,..........		$973 41

Brought forward,		$973 41

EXPENDITURE.

Seeds and expenses,	$663 62	
Allowance to officers,	15 00	
Expenses delegates to Maritime Winter Fair,	20 00	
Agricultural literature,	22 50	
		721 12
Balance on hand,		$252 29

S. E. COLWELL,
Treasurer.

Note—Farmers' Institute account included in above.

REPORT.

The season started in fine with promise of abundant crops, but early in June the weather turned wet and cold, and remained so nearly all summer.

Hay about seventy-five per cent. of a crop, and gathered in fine condition. Oats and buckwheat a short crop. Wheat a fair crop. Potatoes and other roots good. Small fruit an abundant crop. Apples good, but no market here for early varieties.

The Society purchased quite a large supply of seeds, $700 worth in all. These seeds gave general satisfaction; the wheat turned out especially good.

WM. N. RAYMOND,
Secretary.

SOCIETY FOR DISTRICT NO. 84, MADAWASKA COUNTY.

President—Antoine Cyr, St. Francois.
Secretary—Emile Nadeau, St. Francois.
Treasurer—Joseph Albert, Pelletier's Mills.

INCOME.

Balance from previous year, ...	$ 39 95	
Subscriptions and donations (100 members),. ...	100 00	
Provincial grant,..	121 00	
Sale of stock,..	8 60	
		$269 55

EXPENDITURE.

Paid premiums, ...	$ 83 00	
Stock and expenses, ...	106 75	
Expenses of show,..	9 70	
Allowance to officers, ...	12 00	
		211 45
Balance on hand, ...		$ 58 10

JOSEPH ALBERT,
Treasurer.

REPORT.

Spring opened wet and cold, making seeding and planting late. In fact, the entire season was nearly a month late.

Hay an average, but, owing to wet weather, considerable trouble was experienced in housing it. A large percentage was spoiled by the wet weather. Oats and wheat good; buckwheat very good; root crops above the average; fruit good.

The funds of the Society were largely devoted to the purchase of pure bred stock and fertilizers. The same rule will be followed next year. Last year we purchased two splendid Holstein bulls and two Yorkshire pigs, all pure bred.

The annual fair was held in October, and was well attended.

EMILE NADEAU,
Secretary.

MARITIME WINTER FAIR.

The fourth Maritime Winter Fair was held at the Fair building, Amherst, N. S., on the 12th, 13th, 14th and 15th days of Dec., 1904.

This fair was held under the management of the Maritime Stock Breeders' Association, assisted by grants from the Dominion, Nova Scotia, New Brunswick, and Prince Edward Island Governments.

President E. B. Elderkin presided at the opening ceremonies, and seated on the platform with him were Mayor Rhodes, H. J. Logan, M.P., C. C. James, Deputy Minister Agriculture for Ontario, Hon. L. P. Farris, Commissioner for Agriculture for N. B.; Principal Cummings, Truro Agricultural College; Rev. Father Burke, of P. E. I.; A. B. Copp, M.P.P., and others. Every seat in the large auditorium was completely filled. Letters of regret at inability to attend were received from Sir F. W. Borden, Hon. W. S. Fielding, Hon. Sydney Fisher, and Hon. Mr. Longley.

Addresses of welcome, on behalf of the town of Amherst and the County of Cumberland, were made by Mayor Rhodes and H. J. Logan, M.P.

Hon. L. P. Farris, on rising to reply, was received with applause. In his dual capacity as Commissioner for Agriculture for New Brunswick, and as a representative of the New Brunswick Government, he heartily thanked His Worship and Mr. Logan for their very kind welcome to Amherst and Cumberland. It was a great pleasure for him to come year after year and attend these Fairs — something he always looked forward to. He congratulated the Maritime Stock Breeders' Association for the highly creditable way they were able to follow three Fairs by another equally as good, or better.

You may find a little jealously in other parts of the Maritime Provinces because Nova Scotia has secured the Fair, but I want to say decidedly, that if we are going to keep pace with the march of progress we have got to do away with our Provincialism and take a broader view of matters such as this. Every section of the Province cannot have it, and my own Province has nothing to complain of, from the fact that you have it firmly established here. While I am at the head of the Department of Agriculture in New Brunswick, I will assist in every way possible to make smooth the way of this Fair. I am pleased with the interest New Brunswick farmers are taking in it, and I am pleased with the exhibits New Brunswickers have made—they are very creditable indeed. Next year I hope more of our farmers will come, with more exhibits.

Mr. Farris then referred to the great development which was taking place in the West, but not, he thought, at the expense of the East. History will repeat itself in the Maritime Provinces, Ontario, and Quebec, and these Provinces will be to Canada what the Eastern States are to the great Republic to the south of us. The people of Canada will be able to hold their own in the process of development which Canada is undergoing, and Fairs such as this will be no small factor in helping us to achieve our destiny.

Hon. H. R. Emmerson, Minister of Railways, on rising to address the audience, was roundly applauded.

He said: "I come as a visitor to your Fair, but not as a stranger to your town or county. I wish, before saying anything further, to protest against being referred to and included among 'those from abroad.' I do not think it fair that at a gathering such as this, visitors should be referred to as coming from abroad. We are just as much at home here as the rest of you; we are going to make ourselves at home, and we have a very good excuse for doing so, because of the welcome extended to us.

"The Winter Fair appears to be an institution that has come to stay. The question involved in Winter Fairs is one for the agriculturists to solve, and I do not think I should attempt to crack such a nut. A few hours ago, before a smaller gathering, I made reference to the great love politicians seem to have in their hearts for agriculturists, especially at election time—of course, no one will suspect me in that connection, but these utterances may be resented by other gentlemen present. But I have had something to do with progressive agriculture myself. When I was leader of the New Brunswick Government it was my privilege to have to deal with the wheat question, and by solving that knotty problem I feel I have qualified for a first-class Minister of Agriculture.

"Agriculture in these Provinces is sometimes erroneously deemed to be a very small matter, and I have often thought that the people of

Canada were forgetful of the rich resources of these Provinces down by the sea. I have it from a very high authority connected with immigration matters, that within the next twelve months there will come to this country no less than 200,000 people. I think I am not betraying any secret when I say that a determined effort will be made during the next two years to bring in nearly half a million immigrants, certainly a number exceeding 400,000. These people will not come from across the ocean alone, but we will draw also upon the Republic to the south of us. But the eyes of the immigrants are turned toward our Western heritage, and there is a forgetfulness among our people so far as the rich resources of these Maritime Provinces are concerned. How many of that half million will come to the Maritime Provinces? I am not speaking in any carping spirit. I trust I am speaking in a broad unsectional way. It is true the greater always attracts the eye. I well realize the wonderful resources of the great West, but it should not be forgotten that we have various large resources down here by the sea, and a population intelligent and industrious. We have all this, and it is due to ourselves, due to Canada, that we should make ourselves known. I do not refer to my own Province alone, but to all three Provinces alike; they all stand on the same footing. My friend has said that this platform is like the political platform, inasmuch as it is above the heads of the people. Not so; political platforms are on a level with the people, and in this Dominion that level is high, that standard is high, but let us create for ourselves a still higher standard, that we may attract those from other lands to come and make their homes with us.

"It was my privilege to meet, at St. Louis, a few weeks ago, a large number of people from the Southern States, and I suppose they would have been greatly surprised had I told them that people were leaving Louisana, Texas, and even Mexico, to make homes for themselves in Canada. We should do something to attract these people to this part of the Dominion.

"I want to say one word more in connection with Fairs. There was a Fair which closed its doors not long ago—I refer to the St. Louis Fair, and it was my pleasure to have attended it. I saw there two things which cheered my heart. In the first place, the Canadian headquarters was the most democratic institution in all the Fair. You did not need a ticket to gain admission to its portals, and you were treated, no matter where you came from, in a manner reflecting great credit on Canadian hospitality. You did not have to pay for a glass of ice water, and you could sit on the broad verandahs, and in the reception rooms, and enjoy many other privileges without cost. The exhibits in the agricultural department, in the mining department, and in all the departments, were equal to those from any State in the Union. If you desired to feel a sense of pride you should have gone to St. Louis and heard the true things which were said about Canada and Canadian institutions. Although Massachusetts, Illinois, and the other States had erected magnificent buildings, you had to enter them hat in hand, and on bended knee; and when they had their gatherings you had to go in full dress; but to the Canadian building, in the Fair ground, you could go in the most democratic way, and be received in the kindest manner—and yet we live under a monarchial form of Government! As Canadians we are proud of the part we took at St. Louis.

"Let me say now what perhaps I should have said before. Hon. Mr. Fisher has commissioned me to express his regrets, and to say that matters pertaining to this same Fair have called him to St. Louis.

"Now, Mr. Chairman, I want to thank you for your kind reception, and, acting for the Minister of Agriculture, I declare this Fourth Maritime Winter Fair formally opened, to be dealt with just as you and the management may determine."

F. W. HODSON, DOMINION LIVE STOCK COMMISSIONER.

Mr. Chairman, Ladies and Gentlemen:—

I did not expect to have to address this audience this evening, but it is a very great pleasure to be here, I can assure you. I had expected that Hon. Mr. Fisher, Minister of Agriculture, would be here, and I regret his enforced absence very sincerely.

The President referred to the Department of Agriculture of Ontario rendering us such great service. That is true; we owe a great deal to the Department of Agriculture of Ontario. As Dominion Live Stock Commissioner, it is my duty to have to ask the Ontario Department from time to time for assistance, and I have always found a very sympathetic helper in my friend Mr. C. C. James, the Deputy Comissioner. I believe he will address you this evening, and I want to bear testimony concerning that gentleman. All of you do not know him as well as I do; I have had the very great privilege of working under him for six or seven years, and, while I have been exceedingly happy in my service in the Dominion Department of Agriculture, I have never spent a happier six years in all my life. I think, after you have heard him tonight, you will know the reason why.

The Ontario Department was older in the light of organization than any other Province. It was there they organized the Farmers' Institutes and these educational shows; afterwards they were established in other parts of Canada. Let us go to British Columbia, there you will find agricultural educational work well established. In the great West they have taken a leaf out of Ontario's book, and are proceeding along similar lines. I do not want you to believe that I think there is only one Province, and that is Ontario; I do not believe so. I know there are many Provinces, and I look on Ontario as one of the Provinces of the great Canadian nation that is becoming greater and greater day by day. I am glad to know my native Province has been forward in the van of agricultural advancement, and while I did belong to Ontario, I belong as much now to the Maritime Provinces as any of the other Provinces, and I am here to serve you to the very best of my ability. I believe it is the duty of public men to serve, not, some of the people, some of the time, but all the people, all the time, and it is my earnest desire to do this.

I would like to call your attention to the first of these great educational Winter Fairs that was held at Guelph. We were told that a Fair could not be made educational, that it was a place where animals were brought into competition, and we must content ourselves with that. At that time we only had eighty-one entries, that was because the Fair was not conducted along educational lines. But through the wisdom of Mr. James and Hon. Mr. Dryden, we were encouraged to make that Fair more educational, and year after year it has grown more so. I want to read some figures that may encourage you to continue along these lines. In 1881 there were eighty-one entries of dressed poultry and live animals. They drew $325 in prizes, and the receipts at the gate were $66.75. Ten years afterwards, largely by reason of the wisdom of Mr. James and Hon. Mr. Dryden, the entries had grown to 3,461, and the prize list had expanded to $6,579, and the gate receipts totalled $1,761. A tremendous growth in ten years. It was a steady growth year after year, not any great advance in any one year. This year we had a further gratifying increase. We had 4,516 entries, and gate receipts of $2,000. This year the prize list aggregated $7,800. That is growth, a steady and wonderful growth, because of the educational features.

I would like to say to all Fair managers who are here—Go and add educational features to your Fair. We do not have a prize list at these Fairs for the purpose of giving a few prizes to a few men, but because we must have animals here for demonstration purposes.

This show was established in 1901, and there was a very good prize list offered. The work here was commenced in a strong and earnest way, and we had an opportunity to profit by the experience of Guelph. In order to carry on the show, grants were secured from the Maritime Provinces amounting to $900, and the rest the Dominion Department of Agriculture provided. The total receipts amounted to $2,852. That is, the Dominion Department contributed about $2,000 towards starting this show. Next year we find the grants from the various Provincial Governments amounting to $2,281, and the total receipts from all Governments amounted to $5,177.33. In 1903 the income from the various Governments had grown to $6,673, and the Governments of the Maritime Provinces contributed about one-half, the Dominion Government the other half. The Guelph people do not need this help, because they have their Fair well established. The grants from the Dominion Department of Agriculture have been made up in several ways. Two or three years ago I said to the Maritime Stock Breeders' Association, " If you will choose a suitable man to carry on this work, I shall recommend to the Minister of Agriculture that that man's salary and expenses be paid year by year." That has been done. We also said, until you are well established, we will make arrangements to send you lecturers each year and pay for their services and expenses. That has been done up to this time by the Dominion Department of Agriculture. A great deal is due to your President, not only for the erection of this building, but also for the success of the Fair. A great deal is due also to the Maritime Stock Breeders' Association. There has been some very earnest work done, and I could not enumerate all who have assisted, but special thanks are due such men as Col. H. M. Campbell, W. W Black, Hon. Mr. Farris, and the other Ministers of Agriculture for the Provinces. They have not only given us their funds, but also moral support and encouragement.

AGRICULTURAL PROSPERITY.

BY C. C. JAMES, DEPUTY MINISTER OF AGRICULTURE FOR ONTARIO.

Mr. Chairman, Ladies and Gentlemen:—

I assure you I feel perfectly at home here. Last week I had the pleasure of speaking to an audience at Guelph, and this audience I am now addressing looks just like the Ontario audience; you are of the same blood and nationality. Then, we have here tonight a man I have known for a number of years, and have known nothing to his discredit, but very much to the contrary. I refer to Mr. F. W. Hodson. Besides, we have quite a delegation from the upper Province, enough to make one feel at home. Mr. Hodson told you that at one time he held a position in our Province, and worked under me. I do not know that he was very much under me, but when he saw fit to leave us, and go into the Dominion service, I told him he was making a mistake, and I do not think I have any reason to change my mind. There is work that can be done within the smaller area that cannot be so well done when one's energits are spread over a large area. We would gladly have kept him. It is our policy in Ontario to train men for possible vacancies; we always keep that in mind. So, we simply promoted his assistant to his office; then, there was the second place to be filled, and whom did we put in? We put in a Nova Scotia boy, and he is occupying that position today, and that young man is a son of the President of this Winter Fair—Mr. Elderkin. He is the second man in our live stock work, and is filling that place to our satisfaction, and with credit to the Province from which he comes.

What have we come down here for? You do not need us. We have not come with the idea that you needed us very much, and could not get along without us. You have been very kind in sending invitations to us, and our men have come back and told of the pleasant time they had, and the benefit they had derived; they told us these things and we were eager to come ourselves. We have come to learn something about your work, and we will carry back inspiration to help us in connection with our own agricultural work; we feel that the great problems of agricultural development should not centre around any one Province, but that the whole Dominion of Canada should be considered as a fair field for work.

You have heard very eloquent reference made here tonight to the great expanse of Canada. People in the outside world, who in the years gone by had never heard of Canada, are beginning to ask where Canada is, and what it is good for. A few years ago I had the opportunity of visiting the Glasgow Exhibition, and there I saw Canadian exhibits in a Canadian building. In one part of the building I saw a large crowd examining piles of gold nuggets from the Yukon, and they were asking one another—"Where is the Yukon?" They were surprised to find that it was in the Dominion of Canada, and in the great British Empire. If that alone were all we had to advertise Canada with, it would, perhaps, attract a good deal of attention, but it is not the gold of the Yukon that makes Canada loom up in the estimation of the world today. If we had to depend for our future upon the possibility of a few people making their fortunes in the rich gold fields, there would not be a very bright future for Canada, for, as a rule, it takes more than a dollar to produce a dollar of gold. It is not the gold fields that has made Canada loom up as it has in the eyes of the world. Not that at all, but the great agricultural possibilities of this country. You may approach the question from any standpoint, but the fact remains that it is the great agricultural possibilities of our country that is bringing to our shores thousands upon thousands of home seekers from across the Atlantic, and from the States to the south of us. We have the opportunities of home making, and people are coming across the ocean and coming north to settle within our lines.

I was very glad indeed to hear Hon. Mr. Emmerson explain to you that Canada is not all wrapped up in the possibilities of the prarie lands of Manitoba and the Northwest. We find this creeping into our newspapers more and more; we find the politicians speaking of it, and it is perhaps becoming fixed in the minds of many of us that the possibilities of Canada are involved entirely in the future of Manitoba and the Northwest, and just as we open up this great area, so much will Canada expand and prosper. We look for great things in that direction; the farming lands in that section will need to be occupied by millions and millions of farmers, but I presume you in the Eastern Provinces have suffered a good deal on account of the opening up of Manitoba and the Northwest. We have felt it in Ontario very severely, especially in the matter of farm help, in fact we have not enough farm help in Ontario to carry on properly the work of farming. I presume you have suffered also, and will continue to suffer. According to some sections of the press, and many public speakers, our great aim and object should be to fill up Manitoba and the Northwest as quickly as possible, and let the other Provinces look after themselves. We need help in Ontario just as much as men are needed to settle in the Northwest.

You may say, "That is all very well, but we will grow rich if we open up Manitoba and the Northwest." I have here one set of figures which I am going to give you to show that in the Province of Ontario there are possibilities in agriculture equal, if not superior, to those of the virgin soils of Manitoba and the Northwest. What applies to Ontario also applies to the other Eastern Provinces. You have heard a great deal about the wonderful expansion, and we are all greatly pleased with it, but let me tell you there is going on an expansion on the older agricultural lands of Canada equal, if not superior, to the expansion on the new lands. While we are devising great things, and appropriating millions for the opening up of those lands, we are increasing the troubles of farm labor in the older settled portions of Canada. This should receive our careful attention. The growth of wheat on the new lands, some fifty or sixty million bushels, seems wonderful. We point to it and say, "There is expansion, there is something wonderful." But let me tell you that while this has been going on in the West, the increase in Ontario has been very much greater indeed. For the last four years, that is 1900, 1901, 1902, and 1903, the farmers of the Province of Ontario produced of beef, bacon, and cheese to the amount of $220,000,000, whereas in the previous four years these three items totalled $147,000,000. That is, in these three products the farmers of Ontario, in the past four years, increased their earnings by $73,000,000 over the previous four years. Put that alongside of the wheat produced in Manitoba and the Northwest, and I think you will agree with me that there has been a good deal of expansion right at home, which is far superior, far more important from a money standpoint, than has been that of the West.

I do not wish to be understood as saying anything against helping or assisting in the development of our new country, but simply refer to our older Province as one case of the expansion which is going on right at home, and I ask you, Ought we to hand out millions of dollars for the one, and close our pockets and say "No" in regard to the other? Our Provincial Fair, at Guelph, is working along the encouragement of these three things. Your Fair down here is working along similar lines. You can do a great deal for Canada by working along these lines in these

Provinces down by the sea, as much as any section of the Northwest is doing. We should give our politicians reason to know that this is a domestic problem that demands as much consideration as anything in Canada today.

We have, in connection with agricultural work, a great variety of problems; we have a variety of problems in Ontario, another in Quebec, and you, down here, have another series. Our method of work of solving these problems may not be exactly those that are suited to you, but by coming down to you and seeing how you work, and how you are prospering, we may learn something, and equally so may you learn something that will help you in your work, by our experience.

With us, agriculture has been making a steady and most remarkable progress during the last few years, and the key to the whole thing has been live stock. And if Manitoba and the Northwest are going to rely simply upon their wheat, their prosperity, their growth, must be very limited indeed. The key to our success has been the improvement of the live stock industry, and it seems to me that live stock is also the key to the situation in the Provinces by the sea.

In discussing this question, we make a great mistake if we leave out of the question the people who do not live upon farms; it is a question concerning the people of the town of Amherst as much as the people of Cumberland, just as much the people of Halifax, St. John and Fredericton as those in the rural parts. The professional men and the business men should give this question careful consideration, for all are intimately concerned in the development of our agricultural industry. Let me put it in this form. I have $100,000 in my pocket, would it be better for me to hand that $100,000 to one man in Amherst, or should I distribute it among 1,000 men in Cumberland County. Which do you think would be the better for the country? That is the work we are engaged in through the various associations, not to put money in the pocket of one man, but to put money in the pockets of all the people of the country. Let us broaden our sympathies and enlarge our interest. We are all concerned in the welfare of the agricultural industry, not merely the farmers, but the people of the towns and cities as well. We, in Ontario, are deeply interested in the success and prosperity of New Brunswick, Nova Scotia, Quebec, and Prince Edward Island.

There is a dependence among farmers, and inter-relation, that is not to be found among people in any other line of work. Here is a man starting out as a producer of beef in a section; it will be very much to his advantage if he has neighbors who are also producing beef. It will be to the advantage of all if that section becomes widely known as a producer of superior beef. Farmers are dependent one upon the other; there is no industry where all must co-operate and pull together to so great an extent as in the farming industry. Our Province cannot develop of itself. We, of the East, are dependent upon the West, and the West in turn is dependent upon us, and it is only by the wise interchange of Province with Province that we can hope to build up the prosperity of this country. There should be no jealousy between farmer and farmer, and Province and Province, and we, from Ontario, come down here to learn something from you and to help you, and we will also give you a very warm welcome in the West.

I want to sum up under three heads the benefit resulting from agricultural development.

In the first place, it means a more equal distribution of wealth among the people. Upon this I need not enlarge. In the second place, it materially assists all other lines of work. The principal source of wealth in our country is the soil; down here you have another resource of which we know little as yet, you have the resources of the sea. But you have also a large agricultural industry, and when that industry is flourishing, so, also, will the professional and business classes, because it is upon this class that the professional and business men are largely dependent. And in the third place it all conduces to national happiness, because, if you tie a people to the soil, you will make them law abiding and peaceable. The great national troubles never come from the country but from the cities and towns. It is the floating population that is not law abiding. All revolutions and disturbances come from this class that have no homes of their own, and are not tied down to the soil. That is the rule. Just as we increase the number of people prospering in the country, so we will increase the prosperity of this country. You will see that this is a question in which all classes are concerned, something of very great importance, not only the individual prosperity of the farmers, but also the national prosperity. It is something upon which we can afford to spend freely, not simply thousands, or hundreds of thousands. All Canada spends $1,400,000 to encourage agriculture. An industry that means so much for the welfare of the country, for the prosperity and peace of the country, should be able to ask from our

Governments, and that means our people, not simply $1,400,000, but ten times as much. There is no investment our Governments could make that would mean so much for the people, no investment that would give such sure returns, as a wise investment of public funds in such institutions as we have here, in agricultural colleges, experimental stations, all designed for the encouragement and instruction of the farmers.

Prof. Cumming, president of the newly-established Agricultural College at Truro, briefly stated the aims and ideals of that institution, and outlined the work it proposed to do.

There was a time not long since when he would have had to indulge in a series of arguments to demonstrate the value of such an institution to the people it was designed to help, but that day has passed. The Ontario Agricultural College has done a great deal for the farmers of that Province, and all that it stands for in Ontario, the Truro College will stand for to the Nova Scotia farmers. No effort will be spared to make the college all that it should be, and he earnestly hoped the farmers would rally to its support. A three-weeks' course will be given in February next; the best men possible will be secured to give lectures and conduct experiments. The success of this college means much to Nova Scotia and the Maritime Provinces, much to the Dominion of Canada.

Tuesday Evening, December 13.

AGRICULTURAL EDUCATION.

C. C. JAMES, DEPUTY MINISTER OF AGRICULTURE FOR ONTARIO.

Mr. Chairman, Ladies and Gentlemen:—

In connection with agriculture, we have not been accustomed in the past to apply the same business principles that we find applicable to many other lines of work, but as we begin to apply business principles and methods, which have been found so helpful and beneficial along other lines of work, to that industry with which we are connected, we find our work prosperous, and we have much greater chances of success.

There are a great many lines along which we have much to learn from other classes and professions.

Here is a young man who decides to become a lawyer. He goes to the public school and receives what training he can get there, and then he goes to a college or university, passes through that and receives his diploma. He is not yet ready or prepared to take up his legal work, for the requirements of the law step in and say to that young man that he must first pass through the office, under the care of some lawyer, and must perfect himself in legal methods before he shall be allowed to practice his profession. Another young man selects medicine as his life work. He goes through the public school, and a college, and then he has to go through one of our medical colleges, and do a certain amount of practicing under a qualified doctor before he is allowed to hang out his shingle, and advertise himself as a medical doctor. And also in the case, say, of a civil engineer; we require that he shall fit himself especially along the lines of his life work. He must first prove himself a man with special knowledge and special training for the calling to which he is about to give his life work. That is the people of the country, the laws of the country, the men who are engaged in the various professions, lay down and establish certain rules and regulations which say that no man shall be a lawyer, or a doctor, or a minister,, or an engineer, until he shall have taken, not simply the ordinary education that the country affords, but must have gone through a special training until he shall have proven himself qualified for the special line of work, before he is allowed to practice his profession. But when we come to the great agricultural industry, what is the case? There is no law which says a man shall not become a farmer until he shall have passed through a certain line of education, and have passed a certain examination. Every man can step into the agricultural work, and he simply has to take his chances. Now, the question has often occurred to me, and I presume it has to you, that if the lawyers, the doctors, the engineers, and the ministers require special training, and must prove their qualifications before they are allowed to enter upon their life work, does it not follow, at least, that some special training ought to be prescribed in connection with those who are going to earn their living and devote their life to the great agricultural industry? In connection with this matter we have not as yet found it necessary, or even advisable, to apply these principles, which have been found so successful and so necessary in connection with the learned professions. We are, however, living in a day when agricultural education means a great deal more than it did a few years ago. It is gradually finding its way into our minds that the man who has some special training, that has some special education in connection with agricultural work, has better chances for success than the man who has not that training or that education. And so we see that the various lines of educational work in connection with agriculture are being developed. These lines of educational work are manifesting themselves in three directions. First—the latest, and that which is most widely distributed, is through agricultural organization, such as the Farmers' Institutes, Live Stock Associations, Fruit Growers' Associations, through all that variety of methods which are called organization; and, yet, if you will stop and consider these a moment, how inadequate such methods of work must necessarily be, even though they may be very helpful. Here is a young man who intends to carry on his life work in connection with agriculture. We let him have a little schooling at a country school, perhaps in some cases this is very, very meagre indeed. One out of a hundred, or out of four hundred, will take a supplementary course at a high school. In the great majority of cases, however, we wait until he is a full-grown man of mature years, we wait until his muscles have set, until his mind has become fixed, until it has lost that receptive condion which is characteristic of the young, and is lessened to a great extent in the man of mature years. We wait until he is full-grown, and then we say if you will go out and ally yourself with the Farmers' Institute, the Live Stock Association, and the various organizations we have, if you will do this, we will send to you teachers who are experts, and then, perhaps, you many receive some education. This seems to me one of the irrational and unscientific methods that we are pursuing in connection with our agricultural industry. Supposing we should say to the young man, who is going to become a doctor, "Go out and practice, get a little education, try your hand on your fellow men. experiment on him, and if you succeed fairly well, you may continue in the profession for some years. Then we will send to you men who are well qualified, so that they may teach and assist you." Suppose we were to say something of that kind to the legal profession. "Young man, you propose to become a lawyer, well, go out and practice upon your fellow beings, if you can find any who are willing to trust their cases to your care; go out and practice, grow up with the profession, and then when you have established yourself, and have developed into a matured man, we wil form a legal association, and we will send to address you men who have studied law in other countries, who have made a special study of law in all its various forms—then, and not till then, will we be able to help you. This, I have stated, is our latest form of educating the farmer. It certainly has done a great deal for this important industry, and a great many of the successful farmers in this and the other Provinces can attribute a great deal of their progress to the benefit they received from these organizations. And yet it is not the rational way of educating.

The second line along which we reach the agriculturists of Canada is by the establishment of agricultural colleges. We have one in Ontario, which, after thirty years, is becoming fairly well established; but the agricultural college with which I have been connected, and from which you have seen some representatives year after year, has not always had the support of the people, has not always done the good work it is now doing. It was chiefly through these organizations, of which I have been speaking, that the institution has become popular, and been enabled to do the work it has accomplished. You, in the Province of Nova Scotia, are just starting a college where we started thirty years ago, and you ought to be able to profit by the mistakes we made, you ought to be able to avoid them, and the point I want to make is this. Year after year the Ontario Agricultural College was looked upon with distrust by the very people it was intended to benefit. The farmers did not rally around it, did not come to its support, largely because they were unacquainted with its work. It was largely through the various organizations, such as Farmers' Institutes, Dairy and Live Stock Associations, that we were able to prove to the farmers of Ontario that we were doing work that was for their best interest. You are starting here under much happier circumstances; you have your organizations, which ought to accomplish a great deal for the building up of this large live stock industry. You are just now starting a college which you can either make or mar; it is now in the hands of the farmers of New Brunswick, Nova Scotia, and Prince Edward Island to say whether that college shall be a great success or a failure. You have here the man who has been selected to be president of that institution, and I would like to say simply this, that we part with Prof. Cumming with a great deal of regret. As I stated last night, it has been our policy to train young men to succeed those who necessarily will some day have to step out. Prof. Cumming was one of the young men we had in training, and we hoped to be able to retain his services. You have, however, asked for him, and we send him back to you as one of your own sons with best wishes, in the hope that he will accomplish here what we hoped he would accomplish for us in the West. Now, the success of the college will depend not merely upon the work Prof. Cumming and his assistants will be able to do, but largely upon the hearty support that the farmers of these Eastern Provinces will give the work that is being attempted. You can make it or mar it. The work of our college in the West was retarded for fifteen years, for almost twenty years, because of the fact that the farmers of our country did not understand, and were not familiar with its work. We had to send out our men and our students through the various organizations, and gradually it dawned upon the farmers what that institution was intended for, that it was in existence for the benefit of the agriculturists and for no other class, and now we have a united people behind it. We have the farmers coming to the college and the college going to the farmers, and it is doing a great deal to promote the prosperity of the country. What is the use of an agricultural college, and what place does it fill in connection with the agricultural education of the people? In the first place, it can educate only a small proportion of the young men who are living upon the farms of the country. It will attract to itself the young men who desire a little more education along certain lines, it will educate the young man, and perhaps make a specialist of him, an expert. But do not make the mistake along this line that has been made with us. Year after year, it was thought that simply because a young man went to the Agricultural College, he must be a great deal better than the hundreds who do not take advantage of the opportunity. Now, apply to the college some of the criticisms that you apply to your academy or public school—the Agricultural College no more aims to put brains into a young man than your public school. It simply professes to take the young man who is equipped with a moderate amount of brains, and who is desirous of developing them, and learning more about his work. It aims at directing his energies so that he may develop himself. You cannot take a second or third-class man, put him through an agricultural college, and have a first-class man as a result. There are many men in Ontario who are making a great success of agriculture and have never seen the inside of an agricultural college. They would have been a great deal better, however, had they been able to take that course. A young man can develop himself upon the farm without taking any special training, but he can do it much easier by taking a college course. It aims to help the young man who desires to keep in touch with the latest agricultural thought and method of work. We need, in connection with our organizations and institutions, and the work of the country, a large number of experts, men who are especially qualified in the live stock line, in dairy work, in poultry work, and experts in nature study, in insect life, and the study of soils. Now, the Agricultural College aims to train a large number of young men who may be looked upon as experts in these different lines. The Agricultural College also, through its staff, will be able to throw in its energies along with the organizations of this kind and others, and help on the first line of work I referred to a moment ago. Do not expect, then, that your Agricultural College is to stand if it simply attracts to it young men, whether first-rate or third-rate, and turns out farmers who are superior to the other farmers of the country. Your Agricultural College is simply one factor in the great agricultural movement, doing its work in harmony with the others. It can do a certain work and a certain work only, and it will accomplish that just as it receives the hearty support of the other classes, and works in harmony with them.

Outside of the great agricultural organizations, which are composed of matured men largely, the men and women of the Province, and outside of the young men who are desirous and have the opportunity of attending an Agricultural College, there is that great mass of farmers' sons and daughters all over the country not touched by either of these two lines of work. I could not help thinking this morning that in the seats around this ring there were seated men of forty, fifty, sixty, and seventy years of age. Ten or fifteen years from now the bulk of these men will have gone. The agriculture of the country will know them no more. In ten or fifteen years from now your places will be taken by others. By whom? Your sons and daughters, and they are not here. The young men and the young women of the farm get very little benefit out of organizations of this kind. Now, it seems to me we are making a great mistake in this connection. This meeting is announced, the bills are sent out saying there will be an important meeting held in

Amherst. A live stock man picks up the programme and says, "Well, now, there is something that will interest me. I think I will go down to that meeting." And he goes. He forgets, however, that there sat opposite him at home a young man, the young man who is going to take his place in a very few years. In these associations, these demonstrations and talks, that are going on here, there is ten times as much for the young men at home upon the farm as there is for those who come to attend them. That is one of the points I think we ought to look after. We find something similar in our own Province of Ontario. We find, when we go to address Farmers' Institute meetings, that they are made up largely of old and middle-aged men, the great teachable masses of the people are not there at all. We talk to the people who are there, but their ways and methods of work are largely set; they have their way of thinking, and it is hard to change these men, to make them think along new lines. We have to keep hammering away before we can revolutionize classes of that kind. You belong to that class, and you know very well what I say is sound, common sense in connection with agriculture. It is hard to move you men who have already become set in your ways, and when men go out and tell you that a certain line of treatment differs from yours, and is superior, you say the old way is good enough for you, and at your time of life you will not change. At home, upon the farm, there are others, younger than you, who, in a few years, will have to take your place; they are, in a teachable and receptive condition, and could get a great deal out of these talks and demonstrations that would be of benefit to them in the next ten years.

Now, the next line of work along which we hope this great Canada of ours will be moved and moulded, is in connection with our public school system, and all over Canada this question is being discussed. It has taken ten or twenty years of talk, and some of us who have been engaged in this occupation for that length of time had almost lost heart. We have talked and talked, and it seemed almost as if our words were falling upon barren ground. And yet the movement has been going on all the time, the people are gradually becoming convinced that if it is best to have a special training for the man who is to become a doctor, or a manufacturer, there also should be some special training that would fit a young farmer for his future life work. And so in the various Provinces there is an attempt now being made to adapt our public school system so that the young girls and boys should go in their early years and receive an inclination toward the study of agriculture as an exact science, and not be turned away from it by thousands, as they have been. I think I may say that Nova Scotia has made greater progress along this line than we have in the West. We have been following your work, and have been delighted indeed to see that there were men in the Eastern Provinces fully awake to the importance of teaching the farmer when he is young, and not when full-grown, and trying to instill into him, when young, some principles to help him in his life work. You have made a start, we are trying to make a start up West, and we hope this movement which is being carried on will receive the hearty support and co-operation of the class for which it is intended. We have found with us that while we have made provision for the giving of special instruction in agriculture to the boys and girls on the farm, we have found much difficulty in carrying out the regulations, chiefly because the teachers who are employed in our public schools have not, in many cases, the requisite qualifications for that work. Again and again we approach these agricultural questions from the wrong end. We began with the old man and the mature man, and suddenly it began to dawn upon us we were attacking the subject at the wrong time of life, and we are now trying to overcome and rectify that mistake. The next thing was to make regulations and prescribe a course, but we found we had made a mistake, we had to train the teachers who were to carry out these regulations. So, accordingly, after years of floundering about we began to think about getting things on a rational basis, and so we must start with the teacher, and why? A school depends for its success upon something more than a beautiful building and elaborate equipment. In the old days the schools and colleges of this and other Provinces were able to turn out able men without such things. A school depends for its success upon the man or woman who is carrying on the teaching work. We are just beginning to find out that if we are going to make a success of agricultural education in our rural public schools, we must see that the teachers in charge of those schools are in sympathy with that work, and have proper equipment for the carrying on of the work laid down for them.

The difficulty we have met with in our own Province, and I presume you have met with it here, is this—It is all very well to prescribe agriculture for rural schools, but what about agriculture in the schools of the towns and cities? I stated last night that agriculture was the very foundation of a nation's prosperity. It is something with which not only the people of the country are interested, but the people of the towns as well, and it would be a good thing for the Province if the men who are our lawyers knew something about agriculture, it would be a good thing if the doctors who are driving about the country knew something about agriculture. If our ministers knew a little more about the real, true principles of agriculture, they would be better able to expound to us the principles of the Bible much more intelligently than some of them do today. Did it ever occur to you that the man who is acquainted with the soil, and the growing of crops, and the feeding of stock, and all the other lins of work in connection with agriculture, has the key to the interpretation of the Bible. The people of the Bible are not so much the people of the towns and cities as the people of the country, and a great deal of the teaching of the Bible is along agricultural lines. If we were to get a little more true agricultural principles instilled into the minds of some who try to expound to us the meaning of the scripture, we would have a much more intelligent exposition of that work. There is nothing in agriculture that would hinder the progress of the doctor, minister, or business man, but, on the contrary, the man who has some training in the first principles of agriculture is so much the better, is a man likely to make a success of his practice or his business.

Now a word or two in connection with the work that ought to be taught. When we first began to discuss the ques ion of giving agricultural education in our schools, the people held up their hands in horror and said it could not be done. "Do you suppose we could send our boys and girls to a rural school to be taught how to plough, sow seed, reap grain, and feed live stock?" No one now with any common sense and reason would ask or expect that the teachers in the rural schools should attempt to teach anything of the kind. They can be taught all that at one place only—upon the farm. That was the criticism we had to meet in connection with our Agricultural College, and I presume you will have to meet it here in connection with the Nova Scotia college. You are not, I hope, attempting to build up here an Agricultural College that is simply going to take the boys from the towns and cities, who have no inclination whatever for agriculture, and teach them how to plough, and harness horses and drive them, to reap grain and thresh it; you should insist, as we do, that the young man who comes to the college shall already have a working acquaintance at least with the first principles of agricultural work. The principles of agricultural work can be learned only upon the farm itself. Back of that work there is something that will enable a young man to plow better, to plow straighter and more intelligently, and to get a great deal more out of his ploughing if he knows why he is doing that work, and what are the principles underlying that work. And so we say to the young man when he comes to the Agricultural College, "We are not going to teach you how to plough, we are going to teach you how to think, and we are going to teach you some scientific principles underlying the every day work of the farm." So when that young man is holding his plow, and guiding his horses across the field, he is not doing a work of slavery, not simply manual labor, but he is carrying on a great experiment in physics and chemistry and biology. He will know why he is doing it, and he will enjoy it, because of the intelligence he has to put into it. The man who knows why he is doing the work will do more work and better work, and will get more pleasure out of his work. In our public schools we should aim at giving not practical instruction, which can be acquired upon the farm, but we should aim to instill into the minds of the children some of the principles that underlay every day work upon the farm, and in doing that we can develop him. There is nothing in the teaching of agriculture out of harmony with other work; there is nothing in it that is antagonistic to other work. But we should aim at doing a little, and doing it well in this connection. What is the trouble with the great agricultural industry of Canada as of other countries? Why is it that so many find the work irksome, that so many leave the farm for other pursuits and calling? They will tell you that work upon the farm is hard work, from early morning to late at night it is work, and we can get more out of some other line of work. The trouble is they have been farming simply with their muscles, they have not put their brains into the work along with their muscles. The reason they have not been doing it is because in their public school education they did not receive that simple turn in the right direction which would help to unfold to them the simple principles that underlie their work. It does not need a university graduate to teach these simple principles, but it needs a young man or a young woman who is in sympathy with agricultural work, who takes an interest in our great agricultural class, and finds as much interest, for instance, in the growth of a simple weed or flower in the field as a beautiful flower growing in a conservatory in the city. It simply means getting down to know nature that is right about us, not as it is found in some remote place. There is a text in the old testament that I think is worthy of more than one sermon — " Open thou my eyes that I may see wondrous things out of Thy law." If we could put that into every public school teacher, into every young man and woman who goes into a country school to teach, instill that into them and have them work it out, it would accomplish a great deal more than is now being accomplished. If the teacher would take the boys and girls and instill this into them, instead of having them pore over dry books, and trying to solve problems they do not understand, trying to memorize the names of high mountains in Africa or South America that they have never seen or never want to see, instead of trying to put into their heads a great deal of information that will never be useful to them, if they took these boys and girls out of doors and showed them the beauties of the weeds and grasses and flowers, show them the streams flowing down the sides of the road, explain how it is changing and producing soils, explain how all the things of nature work together, if they would do all this they would be accomplishing far more than is being accomplished today in many public schools. It seems to me that this agricultural question, reduced to a simple statement, is this—What we want taught in our public schools, and what will be of most benefit to the children from the farms, and the towns as well, is to have instilled into them a love for the country, for the trees, the flowers, for the grasses, so that their inclination will lead them in that direction, and they will begin to find that there is much right around them, at present hidden from their eyes, that is well worthy of careful study. We do not want to cram the mind with facts; it is not information we want, but formation. We want to instill into a boy or girl the desire to get information, and we want to show them that that information can be got right around them—when you do this, you begin the true education of that boy or girl. I have simply thrown out some general principles. From time to time we hear a great deal said about the wonderful resources of Canada. We have the gold mines of the Yukon, British Columbia, and Nova Scotia; in our Province we have mines of nickel and salt, and other ores; you have deposits of coal here, we have in almost every Province immense tracts of forests. All this wealth means millions and millions of dollars. You have in the tidal waters of the Maritime Provinces riches that some say, acre for acre, are equal to farm lands. We have wonderful resources. Our agricultural resources overtop them all. The eyes of the great world are looking in this direction, and the people are saying they will come in and help us develop these resources. We believe there is a possibility of making homes for those who cannot find homes elsewhere, and we are very pleased to have such a variety of resources. But what are all the mines, all the fisheries, all the forests and rich soils of the country in comparison with the young men and women of the country? In them we have possibilities that cannot be numbered in dollars and cents. The prosperity of our country does not depend so much upon the development of all these vast resources as upon the cultivation and formation of the young men and women. This is a question which, it seems to me, is far more important than the bullocks, and sheep, and pigs brought in here for examination, and we ought to remember that organizations of this kind should not centre their efforts upon the least important element — there is something at home upon the farm that should not be forgotten. While you are here there are at home the young men and women, the coming citizens of this country. The future of the country will depend not upon the gold mines, or forests of spruce and pine, or the fisheries, but upon the young men and the young women. In them rests to a large extent the possibilities. It is for you to see that they grow up into useful citizens, who will help to develop these resources, who will be able to take your place, and who will be better citizens than you are — upon you rests that responsibility. I trust in the consideration of this question we shall not overlook that fact, but we shall give careful consideration to it, for upon it depends the future prosperity and happiness of the country. I trust that down here in these old Provinces you will give careful consideration to this question, and that whatever can be done will be done, so that the future farmers of this country may not simply be hewers of wood and drawers of water, like dumb-driven brutes who work because they have to work, but that there will be raised up a class of bright young farmers' sons and daughters who shall be qualified to carry on their work intelligently, who shall take pleasure in their calling, and who shall become prosperous citizens of this great country. Upon the present boys and girls the future of Canada certainly depends.

FEEDING OF SWINE.

PROF. J. H. GRISDALE, EXPERIMENTAL FARM, OTTAWA.

Mr. Chairman, Ladies and Gentlemen:—

You have heard what Mr. James thinks constitutes agricultural education, you have heard his eloquent comments upon education in general, now I propose, as briefly as possible, to try to give you a little agricultural education in practice. I do not need to apologize to such an audience as this, made up of ladies and gentlemen from all parts of the Maritime Provinces, for bringing before you a topic of this nature. And I think you will agree with me when I give you the extent of the industry concerned. During the last ten years this industry has doubled, and trebled, and quadrupled over and over again. Whereas ten years ago we were able to produce for export half a million dollars worth of inferior bacon, today we are producing sixteen or seventeen million dollars worth of superior quality, which is sent to foreign markets. So, if my subject does not appeal to the aesthetic, it will certainly appeal to the progressive side of our nature, and appeal to you as something worthy of attention and consideration. You have seen the immense development that has taken place in the last few years, but shall we stop at that? Not at all. Consider the case of the little country of Denmark, one of the smallest nations of Europe, whose population is only one-fifth of our own, and yet they send to the markets of the world more bacon than we do. Surely we can do as well as they can, we who have the same blood in our veins. We have a better country, there is no country such as ours, we have every condition and requirement for the production of bacon. Therefore, I think we ought to go to work and do this thing, and do it well and profitably.

How shall we go about this immense development? In the first place, we must start with the right stock. The classes or breeds of pigs which we must start are limited. There are an immense number of breeds, but for our trade it is certain that very few of them will meet our requirements. I may mention in this connection the Yorkshire, the Berkshire, and the Tamworth, their grades and crosses —— any one of these will insure you success if you handle them right. Any one of them will insure profits if handled in the right way. Take any of these breeds and proceed.

The next thing is the care of the stock. The dam is undoubtedly the first consideration. The raising of a litter of pigs should begin with the dam. She should be fed well and developed in every way until she is carrying her first litter, the greatest care is necessary to insure success. Sufficient exercise, sufficient feed, not enough to induce fatness or over-development of the adapose tissue, but enough to keep her healthy and feed the young she is carrying. She must not be confined, because then the young will become crippled and weak; she must have exercise and good feed. The mother should be fed a succulent ration that will induce a good flow of milk; care must be taken that nothing be fed that will cause indigestion in herself or in the young. Her digestive organs are strong, and she will stand a lot of indigestible food, but her young are weak and are easily affected, and unless the food the mother receives is of a superior quality, easily digested, and likely to induce good health, the litter is not likely to succeed.

When the pigs are from three to four weeks old, it will be necessary to give them something in addition to the milk from the mother. The best way to do this is to corner off a spot, and in it place a small trough of sweet milk; see that the milk is sweet. As they learn to drink from a trough, the drain upon the mother will be less, and weaning may begin. I do not think it will be found profitable to wean until from four to six weeks old, and the mother should be taken from the young, not the young from the mother. We must do everything to induce the young to feed. If they are accustomed to feed out of a certain trough, do not disturb any custom they are used to. From eight weeks to three months' old is the most important period in the life of the young pig. If we are to succeed with the mature pigs, we must keep them going from the moment they are born until they are ready for the block. A man who is energetic enough to look after them well will succeed, and the man who is not will not succeed.

We have been carrying on a number of experiments to see what feeds are best suited for pigs at this age, and our experiments point to the great importance of skim milk and whey. We have met with great success, and have been able to produce pork cheaply, and keep the animals in excellent health. The amount of milk need not be large, it seems to act more as a tonic than a food, it has a higher purpose than mere nutrition, it aids digestion. Of course, every farmer cannot have a sufficient supply of skim milk for the number of pigs he would like to raise, and we have been experimenting to find out a feed for pigs that would answer as well. We experimented with skim milk and shorts, and shorts and oil meal, and have found them to be an excellent equivalent. Oil meal costs a little more than grain, but will take the place of grain. We can only succeed by feeding this in small proportions, however. One of oil meal to four of shorts has been found to be the best proportion, and the returns have been almost as good as with skim milk. Pork, with shorts and skim milk, cost $3 per cwt., whereas shorts and oil meal, in proportion of four to one, costs $3.22, when shorts cost $19 per ton, and skim milk 15 cents per cwt. Oil meal costs $28 per ton. We tried oats, bran, ground barley, and peas, and got very good results, but none of them came nearly up to skim milk, or shorts and oil meal. Therefore, I think we may safely say there is a supplementary food that farmers may hope to succeed with—nothing has proved equal to shorts and skim milk, or shorts and oat meal, for feeding pigs from six weeks to three months' old. If I can impress that upon those who are trying to produce pork in winter, then I will have done something worth while here tonight.

Another point in connection with feeding—give them sufficient food, but not too much. I have seen many, many youngsters spoiled by keeping before them constantly a supply of feed. This is folly indeed. The only way to succeed is to keep the youngsters hungry. Feed them frequently; four times a day is better than three, and five better than four. It means more labor, of course, but I think it is much the more profitable way.

When this critical period is passed, the finishing time arrives. The finishing period extends from three and a half to seven months' old. If we are to make a success of this business, we must keep the animal going right from birth to the block. Get them up to weight, sixty, seventy-five or eighty pounds at three months' old, and you can make good bacon pigs of them. How shall we do it? We have quite a variety of grains, a large amount of forage feeds, etc. How shall we mix them to give the best results in the shortest time. Take a mixture of bran, oats, peas and barley, or oats, barley and a little shorts—these mixtures in equal proportions give good results. The proportion of feed is a most important one. Shall we feed whole or ground? Every operation through which the grain goes increases its cost. Our experiments go to show that there is a loss of from four to fifteen per cent. in feeding whole grain. This is principally the case where oats are fed, and I believe oats are a staple with you. There is another way of preparing food, and that is by soaking it. Our experiments show that soaking is quite equal to grinding. You will find it necessary to soak oats and barley from thirty-six to forty-eight hours in water, and you will get just as good results as if they had been ground. When grain is ground, the question arises whether it should be fed dry or wet. We find it advisable to feed dry rather than wet. Pigs fed on slops will never do well. A certain amount of water is necessary, but not as much as is usually given. Have a small trough for the water, and give the pigs their feed about the consistency of thick porridge.

The next point is in regard to cooking. Shall we feed raw or cooked? Our experiments show that it does not pay to cook, whether the food be whole or ground. Some claim it is an advantage to feed it warm, but you must remember that warm feed does not mean cooked feed. There is, of course, a certain advantage in feeding warm food at this season of the year—the animals must be kept warm. The temperature has to be kept up somehow or other. In a recent experiment a number of pigs were allowed to run outside, being provided with a single boarded shelter to sleep in, and they cost us seven cents per hundredweight, whereas pigs which were provided with proper warm quarters cost three and a half cents per hundredweight. So you see the expensive method it is to keep up the temperature by means of feed alone. Do not feed potatoes raw, or you will be disappointed in the result; they are much better cooked, unless they are fed in very small quantities. Turnips are a valuable feed when fed in the right way, and the right way is to cut them into small pieces and cook, and mix the meal in say the proportion of one pound of meal to one pound of turnips. Therefore, if you want to get good returns for your turnips, say sixty cents per bushel, all you have to do is to cook them a little, and add meal ration and feed them to your swine. The other rations it will not pay to cook any more than grain. In addition to the feeds I have mentioned, viz., potatoes and turnips, there are many other feeds. We have mangels, which do not need to be cooked but pulped. Two pounds per day, fed to pigs under three months, will be found ample. Mangels fed to swine are worth from twenty to twenty-five cents per bushel, but sugar beets are worth from thirty-five to forty cents per bushel. Therefore, it would pay a man engaged in the production of pork to grow sugar beets. In order to get the best results, it is necessary to pulp them. When mangels are fed to the old pigs, it is not necessary to pulp them, but sugar beets should always be pulped, as the roots are so much harder.

Then we have clover hay. This is a valuable food for swine. Gather up the leaves and blossoms from the barn floor, and soak in cold water for twenty-four hours, and the mixture will be as palatable and succulent and nutritious as skim milk. That is the only mixture I have found that pigs like quite as much as skim milk. In composition it is quite similar to skim milk.

Question—What about apples?

Prof. Grisdale—Apples are not always a cheap food. We have carried on some experiments with apples. We took six mature sows and fed them on apples and just enough meal to keep them going; we took six other sows and put them on meal alone. The sows on meal required about five pounds per day to keep them in good shape; those that were on meal and apples required about two pounds per day, so you see there was an overlap of three pounds of meal per day, or about three cents per day for each animal. The amount of apples fed was considerable, about half a bushel per day, but they were worth nothing for any other purpose, and I think the man who has pigs can get good results by feeding in small quantities. Among these six sows were three we wished to dispose of. We started to feed them on meal, without any mixture at all, and I never saw pigs gain so rapidly; after this, apple diet. They gained two pounds per day until sent to the block. In summer there are many other supplementary feeds. It is not always the food that is the cheapest, however, that will make the cheapest gains. Our experience goes to show that while feeding swine upon pasture, such as clover, or vetches, or rape, is a cheap way, but not a very rapid way. If we are going to get the very best out of the pastures, we must be content with slow progress, but the man who is not in a hurry may expect to make a little more money in the long run—gains that will cost from four and a half to five cents per pound, where grain alone is fed, will cost from three and a half to four cents a pound on pasture. We are testing continually supplementary foods, and among the more recent were oil meal, gluten meal, the various stock foods, tankage and blood meal. These latter are very valuable, and will soon, I think, come into common use in Canada; at present they are rather expensive, but we hope to be able to cheapen the cost, and then to succeed with them. We have among us a regular flood of stock food, and we have been feeding these rather extensively to determine their value as a pork producer. I cannot give you the exact figures of all these experiments, but I may say in every case where stock food of this character was used, and we have tried International, Anglo-Saxon, Sugar and Flax, and Herbergum, the cost of production was increased. While in some cases gains were very rapid, yet in every case the cost of a pound of gain was considerably increased. A pound of gain, with meal, cost us, in this experiment, four and a half cents per pound; with stock food the cost was in the neighborhood of six cents per pound, a loss of one and three-quarter cents on every pound. In most cases the gain was very rapid when stock food was used, and especially when used for a short time. So in regard to stock foods, I would advise using them only for a short time, and in the case of an animal you wish to bring on rapidly. Do not think of using them as a regular part of the ration for any length of time. Stock foods sell at exceedingly high prices, and I think you should be very economical in the use of them.

A very interesting and valuable address was delivered by Dr. James Fletcher, of the Experimental Farm, Ottawa, on "Insects Injurious to Live Stock," but as it was illustrated by lantern slide pictures, it was impossible for our reporter to get it.

Wednesday Evening, December 14.

THE NEW AGRICULTURE.

C. C. JAMES, DEPUTY MINISTER OF AGRICULTURE FOR ONTARIO.

Mr. Chairman. Ladies and Gentlemen:—

I made a remark in my address last evening which, I am inclined to think, was not clearly expressed, at least it was not clearly understood by some persons. I stated, when talking on my second division, in regard to the work of an agricultural college, that you, in Nova Scotia, were thirty years behind Ontario. I am inclined to think, from some questions I was asked today, that some of you thought I was making a general statement. That statement was made simply in regard to the work of the agricultural college. Our institution has been in existence thirty years, yours is just beginning, and it was only in regard to that matter I would dare to have made such a remark. We do not claim that along other lines we have any start of the good, old Province of Nova Scotia, or any of the other Maritime Provinces. In many particulars we, of the West, are far behind the East, and when we come down to visit the old Province by the sea, we cannot help but think that from this section of the great Dominion of Canada there have gone some of the greatest men that Canada has produced. We have read the letters of Agricola, that is, all of us who have made a special study of agriculture in Canada, and we know that these letters originated the first great movement for agricultural improvement, not only in Nova Scotia, but in all the Dominion. We are quite familiar with the work of such men as Sir Wm. Dawson, Dr. Grant, Dr. Rand, Dr. Parkin, Dr. Schurman, and Dr. Newcombe, and many others. These men have established a reputation for these Provinces by the sea along educational lines. You, indeed, have the ability, so far as Canada is concerned, of producing men who have moulded educational and political life, not only of your own Provinces, but also of those in the West. I would be the last to make any such wide remark that Nova Scotia or New Brunswick, or the tight little Island of the Gulf, were behind those of us who live in the West.

My subject tonight is The New Agriculture. Up in the Provinces of the West we are trying to shake ourselves clear of the old methods;

we are trying to emerge out of the old agriculture. You may ask—what is the old agriculture? It is only within the last forty or fifty years that it was possible to apply this term to agricultural methods, even in the most advanced agricultural countries of Europe. You have only, for instance, to go back in your own experience to know that it was but yesterday that we laid aside the scythe and sickle and cradle for the reaping machine and self-binder. That sickle which we laid aside (and which in many places is still in use) has retained its form unchanged for centuries. When we began to lay aside these old implements, we began to move out of the old agriculture and into the new. We are moving out of the old conditions up in our Province; our experience has been something like this, and I presume that, as we came originally from the same stock you did, our agricultural methods have followed, to a large extent, the same lines of development that it has followed down here by the Gulf. When the settlers first came into the Upper Provinces, they found there the primeval forests. It was necessary to cut from those forests a little clearing in which to erect a rude log house, which was their first home. The clearing was extended until a few acres of wheat and corn and oats could be grown. As conditions improved, the settler's fields extended and his live stock increased; the barns began to increase in size; the log building gave place to a modern house. Soon we find them making butter and cheese. We are moving gradually out of the old lines into the new; we are becoming more than simply a grain-growing people. We also began to plant orchards, and became a fruit-producing people. As we contrast the agriculture which is to be found at the present day with that of forty or fifty years ago, we can see that our agricultural methods, our agricultural implements, and our agricultural products differ very materially from those of the days gone by. We are coming into the new agriculture. This building, in which we sit tonight, the live stock that is to be found in the adjoining apartment, the poultry, the fruit up stairs, are all proof that we are doing things along new lines; that we have, so to speak, emerged from old methods, from old ways, and that we are trying to work out our agricultural salvation along new and improved lines.

Now, without giving any further definition of what I mean by The New Agriculture, I propose to refer to it under two or three heads. The first is this. That the new agriculture must be, and ought to be, conducted on business principles. If there is anything in connection with the old methods of work that will strike one in considering them, it will be, I think, that they were not conducted on modern business lines—not along those lines which we now realize are so necessary and so successful. We are not making any complaint, we are not saying anything disparaging to the forefathers of the country, our grandfathers and grandmothers who worked upon the farms of this country, when we say that they did not work on modern business principles. If they were living today their line of work would have to be materially altered. We find that the great businesses that are so successful in our towns and cities are conducted along lines entirely different from those that were followed thirty or forty years ago. The man who undertakes to manufacture something in the towns and cities, lays down a certain line of work, and he must follow that closely and economically, if he is going to make a success of his business. He cannot produce the article in the same way his father or grandfather did. The manufacturer in the town or city has found it necessary to change, from time to time, from his old style of work, and to adopt new lines of work in order that he may be successful. Now, it seems to me, that it would be folly for those who conduct the farms of the country to say that the business man, the manufacturer, has not acted wisely in that regard. The farmer, who, upon his hundred acres is producing hay, wheat, beef, pork, mutton, or cheese, is just as much a manufacturer as the man in the town of Amherst, who produces anything in a factory, and the point I want to make right here is this—If the manufacturer, who is producing something in Amherst, has found it necessary to adopt certain methods of work which will assure him success along the line he desires, so the manufacturer upon the farm must consider these same principles and apply them to his work.

Now, what is the first principle? The first principle is this — The manufacturer will produce, in the first place, what the market demands. Here is a man upon the farm who says, "I am going to produce pork or bacon. I don't care what the market is demanding, it makes no difference to me what the people want, that is a matter entirely immaterial to me; I am going to produce what I think is best, these people will have to buy it." Imagine a man in Amherst saying, "I am going to make the kind of boot, in shape and size, that I think the people ought to wear; they will have to buy them, they will have to wear them; I will find a market somewhere." Does he do that?

Not at all. He asks himself, what do the people demand? and then he will try to produce that which is demanded by the people. And so the man who is engaged in farming should, first of all, ask himself, "What do the great markets of the world demand? I will then follow as closely as I can these demands. If the market calls for a side of bacon, of a certain kind, I am going to make careful study, and I am going to devote my energies toward supplying that demand as nearly as possible."

My next point is this. The manufacturer of the town, as one of his business principles, says this, "I must produce that which my circumstances and conditions will permit, and that only." "I will not make boots and shoes in a place where flour can be produced more economically, and I will not produce flour where boots and shoes can be produced more easily and cheaper." And, so, it seems to me, that the farmers ought to consider that question. Consider just what your own individual farm is capable of producing to the best advantage, and work it out along that line.

The next point is this—The manufacturer in our towns and cities must work economically, he must not waste his raw material. So keen is competition becoming in these days, that it is necessary to utilize as a bye-product what was formerly thrown away. The large sawmills of the country, once so wasteful, are now run practically without any waste whatever. We find a good example of that in the stock yards of Chicago. Thousands of animals are gathered up in the Western States, and every day the large packing houses of Chicago turn them into products to supply the markets of the world. The last particle of the animal is utilized, there is no waste, no refuse. The animal goes into the stock yard and it comes out of the factory without any loss whatever in the process of transformation. The large manufacturers are compelled to use every particle of their raw material. What a few years ago was called waste, is now manufactured into a bye-product. Every farmer, having settled upon what the market demands, and making sure that the farm he is working can supply what is demanded, must see to it that all waste is avoided. It has been said that agriculture will stand more waste than any other great manufacturing operation in the world, and when we look around and see the enormous waste that is going on in connection with agricultural operations, we are inclined to think that it has not been over-estimated. Take your own farm, and see how much waste there is. How much land is wasted by useless fences and stone piles, how much waste there is in the sowing of that land, how much in the handling of the product, how much waste there is in the feeding of that product to the animals, and how much waste there is in handling the finished product. Note another point. The ordinary manufacturer of the town has only a few points at which he must stop leaks, one or two things to guard against; the farmer has them by the score. In this respect the farm, regarded as a manufacturing business, is far more complicated, as a consequence first-class farming demands a higher intelligence than is required in the ordinary manufacturing operations of the towns and cities. The ordinary manufacturing operation is comparatively simple compared with that which is carried on upon the farm. You have only to examine that to see. Here is a man who works a mill for the production of flour. He buys the wheat and puts it through a comparatively simple operation, and turns it into flour. But it is a far more complicated process, and it should require far greater skill and knowledge to take the soil, air, and water, and produce the wheat in the first place. You can carry that idea through a great many other lines. If the manufacturies of our towns and cities demand care and intelligence in order that they may be carried on successfully, the operations upon the farm demand a more complicated system, and a higher rate of intelligence, and I think the manufacturers of the towns and cities will be the first to admit that my contention is correct. The only thing that helps us is that we are working, more or less, in harmony with nature, and that helps us over many difficulties. Nature assists us out of our blundering, but is more and more demanding of us care and intelligence.

My next point is this—The farm must be conducted on scientific principles. That is, we must call to our aid, in connection with our agricultural work, the latest investigations, results of the work of scientific experts. A great many are inclined to throw up their hands and say, "We don't want any book farming." We used to hear that a great deal more than we do at the present day. It is gradually forcing itself in upon the minds of our farmers that there may be a great deal in books, a great deal that is true and helpful. Why should we object to finding in books anything that is true and likely to help us? Here is a farmer that goes into the field with his team and his reaper. He goes to work and he says he will find out all this information for himself, and he works early and late, and year after year he struggles with the stubborn soil, and sows grain that is, perhaps, not of the best kind, and ultimately becomes a successful farmer, and achieves a large amount of prosperity. That man has done very well under the circumstances, and everyone is prepared to give him full credit — he taught himself. But if a man can pick up an agricultural book, an agricultural paper, and from the reading of it find out a short cut to the information which otherwise would take a long time to acquire, why should he refuse to do so? The man in the town buys everything he can find that is likely to give him any information in regard to his work, and will help him along. The day is passing when people will object to learning anything from the books and papers. A man stands up and tells you something about handling and judging live stock, and you will be apt to believe him, but if he writes it in a book, some farmers will not read it. We are getting over that, and we are beginning to find out there are other men besides ourselves who know something about these things. We are prepared to learn something from our neighbor, from his work, from the experience of others; we are beginning to accept information from whatever source it may come. During the last twenty or twenty-five years there has been a most remarkable development of science in its relation to agriculture. Science has gone out and taken the soil from the fields, and has proved to us that although the plant takes very little out of the soil, yet the plant must find a certain amount of material in the soil, otherwise it will not grow or prosper. We have applied the simple principles to the study of crops. Here are two samples of grain, you use one and get results; you use the other and get results that are double or treble. How is that brought about? By chance? Not at all—by scientific research. These scientific principles have not been discovered by the men who work upon the fields, or in the stables, but have been carried on through work in the laboratory. They have been making discoveries in connection with our soils, and the seed we sow in this soil, the value of different materials for feeding animals, in regard to the growth and development of our fruits, studying insects which prey upon our fruit trees and crops. We must get some knowledge of our soil, what the difference is between one kind of ground and another, then we can hope to apply these principles, and work along the lines that are suitable to our conditions. The men in the arena here tell you that certain feeds must be fed in a certain way to produce best results. They are giving you this information simply as a result obtained from working along scientific lines.

My next point is this—This work is going to be a great deal more enjoyable. You have, no doubt, all become familiar with the cartoon depicting the old farmer, with his long cowhide boots, old rusty jacket, straw hat, with a few straws sticking out of his hair, and they called him " old hayseed." But all of that is gone by, and the cartoonists, up West at least, are very chary of referring to the farmer as old hayseed. It has gone by, and whatever the farmer may have looked like in the past, it does not do to picture him now in that way, because it is not a true picture. The farmer is getting more enjoyment than he used to. His work, of course, is hard work, but go where you will you will find hard work. There is not a man, who is making a success of his business, who is not, perhaps, working harder than the hardest working farmer in this Province. The farmer is working hard, of course he is, but he is getting more enjoyment out of his work. He is putting in more intelligence and more brains, and he finds his work is opening up and expanding, and he is getting more enjoyment out of it. Here is a man feeding a bunch of steers; he is doing it simply by rule of thumb, he does not know why he feeds certain feed. He has to make some money. His neighbor is doing it, as we say, on scientific principles; he is doing it carefully and exactly; he is watching the weekly growth of the animals; he is careful that the feed is of the right kind and properly prepared. That man is taking an interest in his work, and will get results that the other man cannot expect. He is doing his work intelligently and scientifically, and that is the man you cannot induce to leave the country and take up his abode in the town. The town has no attraction for the farmer who is carrying on his work along scientific principles, because he is also doing it with pleasure. A few years ago, as I stated last evening, it was found out that the farmer needed education as well as people in other lines of work. That is, the world suddenly discovered there was a farmer, that he was a man in need of education, and was capable of being developed, and of making progress equal to, if not greater, than those in any other line of work. We had to educate the doctor, the lawyer, and the minister, and now we must take hold of the problem, far more important than the others, that of educating and developing the farmer.

We have made another discovery up in Ontario, and I presume you have made that discovery down here. We had discovered that there were 200,000 farmers in Ontario, and about two years ago we woke up from our long sleep, and found out, apparently for the first time, that each of these farmers had a wife. Have you made that discovery in Nova Scotia and New Brunswick? We are trying now to make amends, and we have inaugurated a movement which is going ahead with more rapidity than any movement we had previously started, that is a movement for the benefit of the farmer's wife. You have heard, "Man works from sun to sun, but woman's work is never done." If there is any place in the world where that is true it is on the farm. Long after the farmer has come in from his work, and pulled off his boots, and settled down to read the weekly paper or the agricultural paper, long after that his good wife continues her work. Is there nothing along this line that the people of Eastern Canada cannot take up and develop? We have found that it is going ahead with wonderful impetus. I heard a wide-awake farmer's wife from the West the other day make this statement: "The farmer's wife has a pretty hard time of it. She has not at her disposal the labor-saving devices that man has. If a farmer hears of a new self-binder or reaper, he hurries off to town to see about it, but he never seems to think that there is in the home a co-laborer, whose work should be lightened by labor-saving devices if it is possible. And she pictured to us the old-fashioned way that things had to be done about the kitchen, and declared that the kitchen was the most unprogressive place upon the farm. She said that when you find men at work in kitchens, you will find they at once begin to devise labor-saving arrangements, but so long as a woman is allowed to remain in the kitchen, little attention has been paid to that matter. But now the farmer's wife is taking hold of that question, and we are trying to do something to relieve her of a good deal of the drudgery. When the farmer's wife has her labors lightened, she will be able to devote more time to the care of her children, and to reading, and will be able to make home much better and pleasanter than it was before.

I said last night we were beginning to find out that there were children in the home. We began to teach people from the wrong end. We built universities, then colleges, and then intermediate schools, we built from the top down. We did the same in regard to agricultural education. We built new fences, and then put up new barns, and put improved varieties of stock into them, and then we investigated new varieties of seeds, and then, perhaps, we set about improving the garden and orchard. Don't you see that we were working at the wrong end? The farmer does not live in the fields, that is simply where he works. There is a little house right in the centre of his farm, the very heart and centre of the whole thing, there is where his wife and children are. Here is where the new agriculture can find its complete fruition. It takes in not only the farmer himself, but also his wife and children. The formation, the reformation of the agricultural homes of the country is our greatest and most important problem in connection with this new agriculture about which I am speaking to you. So long as we can look out over the country and see men and women imbued with this idea of new agriculture, we can take heart that this great agricultural industry will move forward, because it is from these men and women that success must ultimately come. In movements of this kind we must not pay too much attention to the live stock and machinery, and improved seed, etc. If we start right first the others will necessarily follow. There will come from the farm homes, where there is a desire and an inspiration for those things which pertain to the new agriculture, the men and women who will make this country great. We will no longer hear the farmer referred to as "old hayseed," but you will see the farmer walk down the streets of your town wearing as good clothes as the townsman, carrying his head erect as any one, paying his debts as any other man, conducting himself in the most exemplary manner, and he will be referred to not simply as a farmer, but as a true citizen of Canada.

POULTRY.

PROF. GRAHAM, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

Mr. Chairman, Ladies and Gentlemen:—

You have certainly listened to a very excellent address from Mr. James, on The New Agriculture. Tonight I have to speak along a line that might well be included under that heading. The majority of you, no doubt, believe, or have believed in the past, that the hen was a necessary evil on the ordinary farm. Few of you have stopped to think how much revenue the hens of the Dominion of Canada bring in. Few of you have ever stopped to think, to make a comparison, of the revenue brought in by the hens, per capital invested, compared with other lines of farm work. In looking over the statistics compiled by the Department of Agriculture, at Ottawa, I notice that for every dollar invested in real estate, in field crops, is yielded a revenue of twenty cents; for every dollar invested in beef you get fifty cents; for every dollar invested in dairying you get a return of one dollar, but for every dollar invested in poultry you get a return of two dollars—almost four times as much as you get from your field crops. The reason why you have looked down upon poultry is because your mind has been taken up with what you would perhaps term larger things. You have considered poultry keeping as too simple for practical business purposes. I am reminded, in this connection, of what a gentleman said to me a week or so ago. This gentleman is one of the leading financiers of the city of Montreal. He said to me, "Graham, I am interested in very many lines of business, and two lines I am interested in pay me extremely well. To the majority of people these two lines would probably be considered beneath the notice of a man of large business interests, one of them is a laundry, and the other a cartage business. It is not by means of the large hotel orders, or the family washing, that we make our profits, but on the bills that are not over fifty cents. And in the cartage business it is not the roller mill contract, or the contract with the big sugar refinery, that pays; these are all done by tender, and the margin is very small; but our money is made by the small orders, from the man who runs the grocery, and such like." Now, it is much the same with regard to the poultry business. Take a steer, for instance, and at three years old he is worth $75, which seems a large sum of money. You think of a hen being worth a dollar when one year old, but you get your money from the hen long before you do from the steer. You must bear in mind that these little things are making large sums for the capital invested, and when you get enough of them together you will make money. While I do not advocate keeping thousands of hens, yet, at the same time, I think you will find it one of the most profitable branches of farming you have. Undoubtedly they will pay for careful, painstaking attention.

You have one of the best exhibitions of utility chickens at this Fair that it has ever been my pleasure to see. I have never seen so many good utility chickens together in any one place on the American continent. I have seen larger exhibitions of fancy chickens, and possibly, in some respects, better exhibits, but I have yet to see a finer exhibition of what might be called "farmers' chickens," or "money-making chickens," in the Dominion of Canada. With such birds at your disposal, surely you have one of the best opportunities possible to make poultry keeping profitable.

No doubt, many of you have heard and read a good deal about how to keep the boys and girls on the farm. That is one of the most serious problems that Ontario has to solve, and I presume it is the same here. Perhaps some of you would like your sons to be live stock breedsrs, some to follow other branches of farm work, but why do the young people leave the farm? I think it is largely because you do not give them anything in which they are interested; you have got to get them interested. I find that if I want boys to work well, I have to get them interested in the work they are to do. In poultry keeping we have one of the best things possible to interest the young men, and what do we want in poultry keeping?

In the first place, you have to have good business management—it is a business of detail throughout. The success or failure of the undertaking depends largely upon your attention to detail. We have no line of live stock that responds as rapidly to good treatment as poultry; we have no line of live stock that will show neglect as quickly as poultry. We have no line of live stock that will demonstrate the necessity of good breeding as poultry; there is no line of live stock in which you can develop your facilities of observation as quickly as in poultry keeping.

Coming back to the point of keeping the boys and girls on the farm. It costs considerable money to start a boy in cattle breeding, horse breeding, sheep breeding; in fact the only branch of farming that does not require considerable capital is poultry keeping. If you will go to the trouble of making a simple pen for them, provide a good yard, buy a good pen of birds, buy the best you can get—the best is none too good for any one. I do not think it necessary to buy fancy birds; buy good utility chickens with sound constitutions. Buy a pen of birds of this class and hand it over to them. Give them full care of the birds, and make them keep a record of all the food consumed, and at the end of the year insist on having a statement of profit and loss. There may be a loss, but there should be a profit. Right here I am reminded of a saying—"Success in life is not gained by never making a mistake, but by never making the same mistake twice." Do not think your boy or girl is not going to make some mistakes; everybody makes mistakes, but try to impress upon them never to make the same mistake twice. Profit by experience, in other words.

If you are interested in live stock, and wish to have your boy become a live stock man, you can demonstrate to him through the keeping of poultry the principles of live stock business quicker than any other branch of breeding. The poultry does not cost very much, and you can illustrate to him the evils resulting from inbreeding; if you wish to illustrate the benefit of proper breeding, it is very easily to do so.

Poultry keeping is one of the finest things to develop attention to detail that I know of. If you neglect your birds one or two feeds, they neglect to lay for you; if you neglect a cow for a couple of days, it will not make much apparent difference. A hen will lay only when she is getting good care and attention. You have only to take a look at the birds, they will tell you whether they are getting proper care by their sleek appearance and the number of eggs, or otherwise If they are being neglected they will take on a moppy appearance, and no eggs will be forthcoming.

Just a word or two about egg production. Your success or failure in getting eggs depends upon five points:

1st. You must get a proper start. 2nd. A comfortable house. 3rd. Proper feed. 4th. Attention and care. 5th. Exercise.

You must get a good start, you must get good stock. What do you mean by good stock? Well-developed pullets of such breeds as Plymouth Rocks, Wyandottes, Orphington. I do not say other breeds will not lay; we met with much success with other breeds, but these breeds I have mentioned will give the best general satisfaction. You must bear in mind that one of the strongest points in Plymouth Rocks, Wyandottes, and Orphingtons, is their ability to put on meat. Early molted hens also give good satisfaction. The breeds I have mentioned are the best for general purposes. In Ontario we have to hatch our pullets between 15th April and 15th May in order to get a good egg yield. I do not think your seasons here are much more favorable for the development of late chickens than ours is. The extremely hot weather of July and August forces them to stand still in place of growing, as in the case of late hatched chickens.

An expensive house is not necessary, but it must be comfortable. It does not want to be air-tight. Public opinion in this regard has been somewhat erratic; it ran from one extreme to the other. Years ago we were told about having the house warm; get it hot, practically air-tight. We found that was not a success, the birds did not keep in health. Now, there is a tendency to go to the other extreme. I would advise striking a happy medium. Make the house wind proof, and admit plenty of light, and sufficient pure air. Also, of course, it must be water proof. This is as far as I can go into this matter, owing to the short time at my disposal.

Many farmers ask, "What do you feed the chickens?" They seem to think I will know how to get eggs from any particular kind of feed. Feeding must rank along with housing and breeding in the production of eggs. In order to get eggs at any season of the year you have got to supply meat feed, vegetable feed, and grain. Nearly all of you feed enough grain, few feed enough vegetable feed. I presume you would laugh if I told you that hens would eat hay; in the winter a flock of twenty will eat as much as a yearling calf during one day. They will eat a lot of clover. In the summer they pick the grass. You have to supply clover, some sort of hay, or less grain. Feed mangels, turnips, etc. Then you have to supply meat food. You may think they do not get meat in the summer, but they get it in the shape of earth worms, insects, and the like. In the winter time we have to supply this in some form, so we use slaughter house refuse, as beef head; prepared foods are put up especially for this purpose, such as beef starch, animal meal.

Coming down to grain, we find wheat about the best to feed to our chickens. I presume, however, that is too expensive for you down here. If you are forced to use largely corn, you will have to use more vegetable and more meat food.

Then your birds must have exercise. Try burying some food underneath the straw in the hen house, and make them scratch to get at it.

A man or a woman taking care of poultry must use extremely good judgment. Judgment in feeding and handling the birds, and in keeping the place clean and tidy.

Thursday Evening, December 15.

THE DAIRY COW.

(With living specimens in the ring.)

PROF. J. H. GRISDALE, EXPERIMENTAL FARM, OTTAWA.

Mr. Chairman, Ladies and Gentlemen:—

In the first place, what constitutes a good dairy cow? We have here two fairly good representatives of two breeds of dairy cows; these two animals represent years and years of feeding and breeding. You can make money out of pork, or out of beef, but if you want to grow rich, you will have to get the dairy cow—that is the animal that makes the money for Canada.

In speaking of the beef animal, I said we wanted to see her as nearly a cube in shape as possible. In the dairy animal we want exactly the opposite. The beef animal we want has a great development of muscle; the dairy cow we want has as little of this element as possible; it is not flesh or fat we want, but milk.

Milk is produced from the food, and food, as you know, has to go through the digestive process; therefore, the first thing that is required in a good dairy cow is that she should have digestive organs exceedingly well developed. In the head and body, she must have large, strong jaws; good, large mouth, and the body must be fairly broad, quite deep, with a large barrel. Length is not necessary, but depth is absolutely necessary. The animal should be fairly low set. In fact, she must be a perfect machine for digesting the food that is put into her.

If you examine these two cows, you will notice these forms of development of digestive organs is very marked. Here the digestive organs are well developd. If you put your hand on a beef animal you feel a great layer of flesh and fat overlaying the bones, but in a dairy cow there is just the skin and a very small amount of muscle — the digestive organs occupy practically all the inside of the body. That is the ideal dairy cow.

If an animal is going to masticate food it must possess a good, strong, constitution, for in the production of milk, in the transformation of food into milk, she must have the vital organs exceedingly well developed. You want strong lungs, a stout heart, and all the other organs, connected with the life of an animal, well developed. Two important points—breadth of chest and heart girth.

The udder is an organ that is absolutely necessary. We want in a dairy cow just the contrary of a beef animal, a great development of that part. It should be evenly attached to the body, running far forward and well up behind. It should be divided into four equal parts, and each part should be equally strong in order to get the very best results.

Now, to produce milk, through the digestion of food, is a very delicate process, and we must have great development for this work. In a beef animal we require a calm animal; in the case of a dairy cow we want a quiet animal with great nervous energies, as manifested in the eye and the broad forehead, where the centre of the nervous system is located.

The next thing is the stable. How should the dairy cow be stabled? I stated last night that the beef animal should be kept in an airy, warm stable. If this is necessary in a beef animal, it is absolutely essential for the profitable production of milk. Light, lots of air, and sufficient warmth, must be the complements of every good dairy barn, if it is hoped to make a success.

How should the cows be fed? The digestive process commences after the food is taken into her mouth. You see a cow swallowing hay, ensilage or roots, but she is not eating them, she is merely filling herself up. After she gets them in, she will lay quietly down, and you will see a sort of spasm in her, and presently you will notice her jaws begin to move. Down goes the bit she has been chewing, up comes another. The food is being masticated. If we are going to feed properly, we must feed regularly as possible, giving the cow full time. Give her all she wants to eat, but not too frequently. I have known farmers to feed their cows the moment they get up, after milking, before dinner, after dinner, before supper, after supper, after milking, and right along until bed time. That is the biggest mistake any farmer can make. It leaves the cow no opportunity to digest her food. It also gives him a lot of unnecessary work. If he would feed her in the morning, and have her eat up clean what he feeds, then allow her to lay down quietly until the middle of the afternoon or towards evening, and then give her the rest of her day's feed, he would have far less work to do, and just as good, if not better, results, certainly better than if he fed her four or five times a day. I do not say this theoretically, or because I have read it; I have tried it, and I know whereof I speak.

We tried a number of experiments not later than two months ago, the results of which go to confirm the statement I have made. From the cows we fed twice a day we got as good results as from those that were fed three times.

So much for the manner of feed. Now, in regard to the kind of feed. When there is an abundance of grass, we get the best quality of milk and the largest flow. This is due to two reasons. First, she gets all the feed she wants, and she gets it in the morning and evening; during the balance of the day she lies down and chews her cud. The other reason, over and above this, is that she gets juicy and succulent food. June grass is ninety per cent. water. I have heard men say that feeding turnips was merely watering the cow, because they contain ninety per cent. water. June grass contains the same percentage of water. Succulency is the great essential of food for the dairy cow. In the experiments we have found that cows feed on succulent rations averaged practically three per cent. in a month. You know, a dairy cow, after she has calved a couple of months, begins to go down badly in the flow of milk. If she begins by giving thirty pounds per day, at the end of the second month she will give about twenty-eight or twenty-seven pounds per day. Our experiments show that they fall off about three per cent. on the average on succulent rations, and on clover hay and meal they fell off twenty-two per cent. The decrease was seven times as much when the cows were fed on dry rations, which shows the great importance of making the rations as succulent as possible. Grow roots on you farm to feed to your dairy cattle; if you cannot grow roots, grow corn; have one or the other, and have a silo. Even if your corn does not mature, the fact of its being juicy will add materially to the milk production when there is no grass. A succulent ration is necessary, but it is not enough; do not think you can get a large flow of milk by feeding the cows ensilage alone, or roots alone.

Question—Will turnips affect the milk so as to injure the quality of it?

Prof. Grisdale—My experiments go to show that turnips do affect the quality of the milk; but many claim they do not cause any injurious effects. When fed judiciously, and fed half an hour after milking, I think they might be all right. When a large quantity of turnips are fed the first thing in the morning, and the last thing at night, the butter made from this milk must develop a very strong flavor indeed.

To return to the discussion of the succulent ration. I said a moment ago that roots alone, and ensilage alone, would not be sufficient; we must have meal and hay as well. Clover hay is the best, and the meal you want is the kind that is strong in nitrogen and strong in protein. I speak of gluten and oil meal. These are valuable for the production of butter, and feeding dairy animals. There is no meal as rich in protein as cotton seed meal. It had better be fed in summer, for it has the effect of hardening the butter, and you know butter is always hard enough in winter. It is possible to feed too much meal. I have known farmers to think that the last pound of meal, so long as it produced a pound of milk, was paying for itself, but our experience goes to show that, on the average, a ration of eight pounds of meal per day will not be profitable. When you have a cow that is giving sixty or eighty pounds of milk per day, then you cannot hope to produce it with eight or nine pounds of meal higher ration, but, on the average, it is sufficient to say that eight or nine pounds per day will give very best results.

This is a subject that could be extended further, but the hour is advanced, and I must give way.

BREEDS OF MUTTON SHEEP.

F. W. HODSON, LIVE STOCK COMMISSIONER

(Illustrated.)

Environment, Continuity, Utility, and Crossing are words commonly found in the English language, but not porperly appreciated generally by farmers and breeders of live stock in Canada. In Great Britain they are more generally understood, and in the United States farmers have for some time appreciated the worth of the principles indicated by each of these words. Let us consider them in the order in which I have given them.

Environment—When a Canadian farmer is commencing business, how seldom is it that he thoughtfully considers his environments, and determines the best uses he can make of his land. For instance, a man owning a farm near Toronto, or any other large city, where the land is worth $200 per acre, would not find it highly profitable to make his chief output stocker cattle, nor would beef cattle give the best returns. Dairying, conducted in the best possible way, would give better returns, because his product could be put on the market fresher and better than that of parties living more distant. The fresh milk trade would satisfactorily answer his purpose better than any other line of stock breeding. Dairying probably would not pay him as well as market gardening. The same reasoning holds good in connection with stock farming. A man, in commencing business as a stock grower, should carefully consider his environments. What class of stock is likely to give him the best returns, both for the present and at the close of his business career. Is his farm best suited to the production of horses, cattle, sheep, or swine, and, if so, what breeds are likely to give the best returns. He can only know this by making a careful study of conditions. In Great Britain we find the environments have been very carefully studied, and the breeds developed that are best suited to the districts. Each of the various sections of Great Britain have breeds of horses, cattle, sheep, and swine peculiar to those districts. Why is this? Is it because some prominent farmer in the district has at some time seen something somewhere that took his fancy? It is because the British farmer is farming to make money, and not to satisfy a whim. He has chosen females bred in the district that are best suited to the requirements of his soil and markets, and has carefully improved these by selection and the use of the proper sort of males, always keeping in mind his environments. For this reason in Shropshire we find nothing but Shropshire sheep. In the North of England, and the South of Scotland, the Leicester families prevail. Further up in the hill country we find the Cheviots, and, again, in the higher and more barren hill country, we find the Highland, or Blackfaced Sheep. In other parts, particularly towards the Southwest of England, we find the various classes of Downs, and other breeds each have proved through succeeding ages the best suited to the districts. What has been the practice of the Canadian farmers, generally speaking? Without any regard to his environment he has chosen something that caught his fancy, bred it a few years, and, perhaps, found it unsuitable.

Continuity—The next important word is Continuity. Here, again, we may learn a lesson from British methods. The British farmer, having learned what his environments require, has continued year after year, generation after generation, producing the same family of the same breed, being extremely careful about crosses. This is true of whole regions. It is not an infrequent thing to find a farm on which Leicester sheep have been bred for perhaps from sixty to a hundred years; nor is this true of Leicesters alone, but applies to all breeds of British live stock. Messrs. Mansell, of Shrewsbury, England, who have attained fame as breeders of Shropshire sheep, have been continually breeding the same family of sheep on the same farm for upwards of sixty years. Other families of British farmers have continued in the same lines for a much longer period.

Utility—Utility is another word that should always be foremost in the mind of the stock breeder. Why are we breeding sheep? That they may produce the greatest quantity of the best quality of wool and mutton for feed consumed and care given. This is an important consideration. Though we have acted wisely concerning the choice of the breed, have continued our efforts along the same line for a considerable period, if we do not keep in mind the utility of our animals, our efforts are likely to come to nought. Too much attention has been paid to fads and fancies, and not enough attention to the utility of the animal. The motto, "The greatest quantity of the best quality," has been frequently lost sight of, and greater attention paid to the production of fancy points, of which I will speak when dealing with the individual breeds.

Crossing—Crossing is another feature of breeding very much misunderstood in Canada. In Great Britain it means the selection of ewes of a certain breed, which are crossed with a male of another breed, in order to produce market lambs, but the produce of this cross is never used for breeding purposes. For instance, Cheviot ewes are sometimes crossed with Down rams, and sometimes with Wensleydales, and other of the Leicester families, in order to produce lambs with better feeding qualities, and better selling qualities, than the pure bred Cheviots. But in order to keep a constant supply of Cheviot ewes, a certain number of the best ewes are mated with the best Cheviot rams. These are kept for breeding purposes, while the half-breds are sold to the lowland farmers for feeding purposes. No British breeder thinks of using these cross-bred animals for breeding purposes. Why not? Because hundreds of years of experience has proven that good results cannot be obtained. It is not necessary for me to explain why; experience has taught that such is the case. Experienced breeders, or other thoughtful men, who have studied the conditions, know why.

Canadian farmers have frequently given no consideration to environment, have not made a continued effort along any particular line, but have chosen a breed, bred it a year or two, and not being pleased with the result, have crossed it with some other breed, and so on until the end the resulting flock has been of such a nondescript and irregular character as to be of no value to the breeder or the feeder, and of little value to the butcher, and an absolute injury to the mutton market where they have been sold. In order to obtain the best results, environment must be studied, effort must be continued along the one line, utility must always be kept in view, and miscellaneous crossing must never be done except for a special purpose, and then the offspring must always be fattened and sold. If conducted in this way, the flocks of Canada will be firmly established upon a proper basis, and we will receive the greatest profit for feed consumed, both in wool and mutton, and Canadian mutton will become as famous and as much in demand in the English market as Canadian pork is today. No country in the world is capable of producing better mutton sheep than Canada.

The first breed which we will consider is:

English Leicesters—Wallace, in his excellent work, " Live Stock of Great Britain," gives the following data concerning the breeds here illustrated.

" The Improved English Leicester is the smallest of the Leicester breeds, and has been longer an improved breed than any other long-wool, with the possible exception of the Cotswold. Bakewell accomplished the formation of the improved breed by inbreeding and selection. It has been much employed in crossing to improve other breeds."

Lincolns—" The Improved Lincoln is white-faced, and is as large as any sheep in England—though not larger than the Cotswold. It was produced by crossing the old Lincoln, which was famous for great length and quantity of wool, with the English Leicester. There is still a tuft of wool on the forehead, though not so abundant as of old. The fattening qualities have improved, though the wool has become shorter, lessened in quantity, and deterioated in quality and in lustre. The wool of the breed, as it now exists, is, nevertheless, of superior quality. The staple* of well bred tegs should be as broad as two of a man's fingers."

Cotswolds—"The Cotswold is generally supposed to derive its name from the Cotswold Hills, but the writer of the historical statement published in the first volume of the Cotswold flock-book, points out that it is not improbable the sheep gave the name to the hills upon which they exist—'cotes' meaning buildings in which they were formerly housed, and 'wold' being a wild, open country. Gloucestershire, which may be regarded as the centre of the home of the Cotswold sheep, was, in the time of the Romans, early in the second century, A.D., the seat in a large trade in the manufacture and sale of woollen cloth. From this it may be inferred that considerable care was devoted by our ancestors, even at this remote time, to the breeding of sheep, which there is no reason to doubt were the progenitors of the Cotswolds of the present time, so that the breed is one of the oldest, if not the oldest, in Great Britain. The trade in both sheep and wool was maintained throughout both Saxon and Norman times, and at the present time considerable numbers of Cotswold sheep are exported annually to Germany, to the United States of America, and other foreign parts, where they are appreciated for their large size, and for the power of stamping their distinctive characteristics when crossed with other breeds.

"It has been improved by introduction of Leicester blood. It is extremely hardy and well suited for breeding on stiff land, even when it is pretty wet. The flesh becomes coarse when sheep grow old. At 12 to 15 months' old tegs ought to weigh 25 lbs. to 28 lbs. per quarter. Those more moderately fed, and 'run over' till two years old, get up to 35 lbs. or more per quarter."

Wensleydales—"The Wensleydale is a large, high-standing, Yorkshire-Leicester breed, with a characteristic blue color in the skin of the face and ears, which sometimes extends to the whole of the body, though the shade is deeper on the bare or hairy parts. The dark color is cultivated, because in the extensive use of the rams, in crossing with the

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* The word "staple" here refers to the natural locks consisting of many fibers of wool arranged naturally in bundles, but it is also sometimes wrongly used with reference to a single fibre.

Scotch Blackfaced breed, it is found that dark blue rams throw dark faced lambs, a point which is considered valuable."

Border Leicesters—" The Border Leicester was bred at first from Bakewell's Leicester by crossing with the Cheviot, but it now ranks as a pure-bred, and is one of the best of the varieties of Leicesters. It is largely used in the Southeast of Scotland for crossing with Half-bred, Cheviot, and Blackfaced ewes."

Canadian Leicesters—" Canadian Leicesters are among the best of the Leicester family. Nowhere in the world are finer specimens to be found. This is largely due to the fact that until recent years the American demand for Canadian Leicesters has not been strong, and the Canadian breeders have retained in their flocks the best of each year's crop of lambs. By selection and careful weeding innumerable good flocks have been built up. The excellence of the Leicester proves conclusively to us that if the Canadian breeders of other breeds of sheep would follow the same practice, the Canadian flocks of all sorts would equal or excel those to be found elsewhere."

Half-breds—" The Half-breds, according to Wallace, are produced from Cheviot dams crossed, sometimes, with Wensleydales, Border Leicesters, or Lincoln rams. The produce has been carefully selected, and a type has been established which resembles the Border Leicesters, and also the Cheviots. My own impressions are that those found in the South of Scotland, or the North of England, are generally produced from Border Leicester males or Cheviot females.

" This careful selection has gone on for some time, so that in the 'nineties' the Highland Society recognized them as a distinct breed, and gave them a class at their annual show. From careful inspection on the ground, I concluded that this was one of the most promising breeds of the Leicester family, and especially adapted for hilly land, not so mountainous as that on which the Cheviots are kept, but more rugged than the territory suitable to the Border Leicesters. I believe that this breed of sheep would prove valuable in many parts of Canada. Perhaps they are not as easily fattened as the Border Leicesters, but I think will give large returns in flesh, and as large returns in wool, for food consumed, as the Cheviots. The quality of the carcass, especially in animals above eight months' old, will be superior to the Border Leicesters, and almost, if not quite, equal to the Cheviot. The wool is fine and dense, and possesses abundant yelk."

Cheviots—"The Cheviot is named from the range of hills on the Scotch and English border, their native district. The ewes pasture on the lower and less exposed green hills all over Scotland. Cheviot wethers and Blackfaced Highland ewes go to greater heights, or occupy positions on the black, or more heathery land, at lower elevations."

Blackfaces—"The Scotch Blackfaced Highland breed is smaller than the Cheviot, much hardier, and thrives much better on coarse pasture, such as black, heathery land.

"The wool is curly, loose, and shaggy, hanging down nearly to the ground, and more hairy and kemp than Cheviot wool. It is especially valuable in the manufacture of coarse articles, such as carpets, and is less subject to competition than other wools; it fluctuates less in price. The fleece averages three and a half to four and a half pounds from ewes, and is usually clipped unwashed. Much is exported to America when the price does not exceed sixpence per pound, as then it can be imported under a much smaller duty than higher-priced wools. Blue or black spots on the neck, tail, or other parts of the wool-producing portion of the skin of a Blackfaced sheep are objectionable."

Shropshires—"The Shropshire Down breed of the present time has been produced by crossing the old form with Southdowns to give quality, and with Leicesters to maintain the size. Now, any importation of blood is objectionable, as it leads to divergence from the true type."

Southdowns—"The Sussex, or Southdown, is the breed through which all the other downs have been formed, by crossing it with the old-fashioned varieties of the different districts. It is short-legged, and in all respects most compact and symmetrical, but particularly good in the hind-quarters. The present improved and peculiarly handsome form of the breed has been attained by selection from the original stock."

Oxfords—"The Oxford Down is a breed comparatively recently formed by crossing Hampshire ewes with Cotswold rams. The mutton is of good quality, weighing 20 to 23 lbs. at twelve to fourteen months' old."

Hampshire Downs—"The Hampshire Down breed has its natural habitat on the chalks of Hampshire, and the region lying immediately north and west; hence called the West Country Downs. It was formed by crossing the old Wilks and Hants sheep with the Southdown, and by selection.

"It is larger, coarser looking, and lower set than the Shropshire, and, when young, not easily fed to 'handle fat,' though often forced to great weights by high feeding. Ewes are frequently allowed one pound per day of a mixture of equal parts of linseed cake and peas, or Egyptian beans, until the lambs begin to eat; then this is gradually taken from the ewes and given to the lambs. With abundance of natural food, in addition to the concentrated mixture, a ram lamb may increase from nineteen pounds at dropping, in January, to 150 pounds, live weight, on first of August. Lambs can be got early, as the ewes come in season sooner than most other sheep. If kept for tegs, in an ordinary way they should weigh twenty to twenty-two pounds per quarter at thirteen or fourteen months' old. The mutton is of fine quality, and all over firm to the touch."

Suffolks—"The Suffolk is a hornless breed, which resembles the Hampshire, but is not quite so compact and low set; and the short hair on the face and ears is black, and extends down the back of the head, so that the ears are not surrounded with wool, as in the case of the Southdown. It was bred originally from the hardy, horned, blackfaced Norfolk sheep, by crossing with the Southdown, to give symmetry of form, compactness, and early maturity; and also with the Hampshire, to maintain size and weight. The breed is mentioned in 'The General View of the Agriculture of Suffolk,' as far back as 1797. Some pure bred flocks of the present day date back to 1810, which throws light upon the fact that recent attempts at the importation of foreign blood into the breed have not proved successful. Those in eastern districts partake strongly of the old Norfolk characteristics, viz., dark face, light boned, and active habits; those to the west are, as a rule, kept on better land; they have lighter faces, greater aptitude for fattening, and grow to greater weights.

"The Suffolk breed was not recognized as of sufficient importance to form a class at the Royal Agricultural Society Show until 1886. Since that time it has made rapid strides in advancement. The Suffolk Sheep Breeders' Association has been organized with the object of protection and improvement. The animal they have under their care is possessed of great strength of constitution, distinctive characteristics, and abundance of bone and flesh; and the objects before them ought to be to equalize and refine the type by judicious selection."

Horned Dorsets—" The Dorset and Somerset Horn is a whitefaced breed with a close, short-fleece, weighing four or five pounds, and a tuft of wool on the forehead. The nose, hoofs, and legs, are white. In size it is larger than the Southdown, compact and well proportioned.

" The great peculiarity of the breed is, that the ewes take the ram as early as April, and breed 'house-lamb' ready for Christmas. They also take the ram again soon after lambing, and thus two crops each year may be got, though it involves special precautions The ewes are often tupped for the last season by a Southdown ram, so that the lambs become ripe sooner, and possess dark heads with no horns. Downs, or Down-crosses, are usually supposed to give the best quality of mutton, and there is ,consequently, a run upon dark faces and legs, as butchers can more easily dispose of the mutton of dark-faced sheep."

FRUIT EXHIBIT.

The fruit department of the Fair, both in 1903 and 1904, proved a decided success, fully as much interest being taken in it by visitors as in the stock.

The splendid specimens of the different varieties of apples shown fully demonstrated the capability of the Maritime Provinces to produce that fruit of as high a quality as can be grown anywhere in Canada.

Only a few Counties of New Brunswick were represented, but what was shown was exceedingly good. We would urge the fruit growers to prepare exhibits another season, so that there will be at least three exhibits from each County.

PROCEEDINGS

OF THE

FARMERS' & DAIRYMEN'S ASSOCIATION.

The 29th annual convention of the Farmers' and Dairymen's Association was held in the Church Hall, Fredericton, on January 25th, 26th, and 27th, 1905. The attendance was not as large as usual, only some fifty delegates being present. The blizzard that raged throughout the Province during the entire week, blockading all railroads, and making the country roads impassable, was responsible in a large measure for this; however, the gathering was a fairly representative one.

The opening meeting was held on the evening of the 25th, President Bliss M. Fawcett in the chair. Seated on the platform were Hon. L. P. Farris, Commissioner for Agriculture; His Worship, Mayor Palmer; Vice-President Dow, and others.

THE PRESIDENT'S ADDRESS.

Gentlemen, brother farmers of New Brunswick:—

It is with great pleasure that I greet you this our twenty-ninth anniversary.

When I say gentlemen, I mean it in every sense of the word. We all know it is impossible to farm successfully without live stock, and no breeder ever made a success without being a gentleman, which is a hard-working, upright, thoughtful, honest man; therefore, when I address you as such, it is because I believe there is no body of men in creation today more worthy of that title than a tiller of the soil.

We have very often noticed in American magazines scenes of farmers gathered at railway stations, barn raisings, etc., in which they are pictured with long locks of hair, ill-fitting garments, and uncouth generally. These may be fitting to some of the uneducated portions of Russia, but certainly not to a New Brunswicker.

Twenty-nine years ago a few farmers of our Province thought it a good idea to have an annual gathering, where topics relating to agriculture could be discussed, and our calling generally put on a higher plane.

After considerable difficulty, they gathered at Burton, Sunbury County, in 1876, calling themselves the Farmers' and Dairymen's Association of New Brunswick. Without exception, I think there has been a gathering every year since that time.

Some, and perhaps the great number of those noble men, have gone to the " Great Beyond," and we find ourselves today enjoying the privileges that our fathers inaugurated.

The thought comes to us, Was it a good suggestion this banding ourselves together for the betterment of our calling? I would look around in the many faces tonight, and let you answer that question, which will be a thousand times yes. We can also ask ourselves, Are we, as husbandmen, honest tillers of the soil, who are earning our bread by the sweat of our brow? I say, Are we looked upon by the other industries of life as men who are engaging in a pursuit second to none in this great universe.

The time, perhaps, was once, when we, as a people, were forced to hew down the forests, and turn over the soil with implements very crude indeed, that then the muscle of man was more required than it is today. In those times of such physical strain is it any wonder that we were looked upon as ignorant men. No time for study, it was work from day to day, month after month, and year after year, with only a very plain existence.

I say today we should have great respect for the big-muscled, grand-charactered men of bygone years, who gave us our very existence.

AN AGE OF PROGRESSION.

We must not forget to be thankful that we live in such an age of progression and invention. While our loyalist fathers were busy cutting down the forests, they did n ot fail to instil into the breasts of their children that honest industry which is predominant in our race today.

That very fact of progression shows itself by the way our farmers' sons are being educated.

If, then, the farmers' sons of today are getting education in agriculture and otherwise, they may not at maturity rush to the cities, but will, we hope, remain at home, knowing that every accomplishment is available to the boys and girls who use their hands and brain together.

We can thank ourselves that the Governments of our country are taking such an interest in our pursuit. The Hon. Mr. Farris, of our own Province, has, and is doing all in his power to advance our interests.

They are willing to spend money for institute work, exhibitions, or in any way that is for our betterment.

The exhibitions at Chatham, Sussex, St. John and others last year were, no doubt, a great success. Yet, it is a great question in our minds today whether fakirism is very uplifting to humanity generally.

The stock of our country is, perhaps, improving; no doubt many of us will say most assuredly we are advancing by leaps and bounds.

These five years back we are no doubt improving the stock, but for ten years previous there was a general mixture of all breeds, which, in some sections of our Province, is as bad as ever.

Twenty years ago steamer after steamer load of most excellent grade Shorthorn steers were shipped to Great Britain, in some cases to be slaughtered on arrival, but chiefly for feeding purposes on Scottish and English farms. Today, if the Maritime Provinces were gone over from north to south, and east to west, it would be scarcely possible to gather 200 head, or half a steamer load, that would make a credible showing in the British market.

BEEF INTERESTS HAVE DECLINED.

While the beef interests have greatly declined in the last twenty years, the dairy products have forged ahead. It may be that the life of dairying causes the death of the beef industry. This ought not to be.

I will take strong grounds and say that perhaps a return to the good old days of excellent shipping steers, with Shorthorn dams of good milking qualities, is best of all.

The idea of getting the steer so symmetrical that he will be as broad on shoulder as on hips may sound and look very well, but the everlasting inclining to that type must invariably get the dam so compact as to utterly destroy her usefulness for the dairy.

While we are a progressive people, let us not import almost everything from abroad.

The bold facts are staring us in the face that we are importing hundreds, yes, thousands of barrels of flour annually to feed our people. We are also getting from the West, each year, thousands of dollars' worth of bran, middlings, flour, etc., to feed our swine, dairy cows, etc.

The question is, Cannot this Province of New Brunswick grow more than we are doing today? Is it possible that all the arable land is doing its best and our country so full of people; that the farms are so cut up and small that it is impossible to grow grains as do the other portions of Canada?

Or is it true that so many of our young men have gone to the States, and to our own West, that not enough remain on the farm, therefore the need of such importations?

It is a fact that a great number of us have had timber that we could cut from year to year, and we have depended largely on that for an income, therefore now, when the forests are about all cut down and burned over, we will need to depend altogether on the soil, which, no doubt, is the best of all.

Only a year or two ago our people were determined to seek their fortunes in the Yukon, and today large numbers of our men are digging away, living from hand to mouth, at 40 below zero, in search of the gold nuggets.

Just now hundreds of our people are rushing to our own Northwest, which, a few years ago, was said to be fit only for the wolf and the bear.

FACE TO FACE WITH A PROBLEM.

Be that as it may, we are face to face with the problem, that unless we bestir ourselves our young men, at maturity, will seek homes in these new sections, and their energies turned away from New Brunswick altogether, and we that much worse off on account of their absence.

While we are sending missionaries abroad, let us not forget the sons and daughters that need caring for at home.

As men we have only a certain amount of energy to exert. We have thousands of acres of land where live stock that can be kept, and farms made that can excel any of those in the Northwest.

They, no doubt, can grow larger crops of wheat than we can, but in every other grain we can match them. In roots and garden produce of all descriptions no Province in the Dominion can grow them better.

At our out door convention, in Gagetown, last summer, we saw orchard after orchard growing apples of every variety. Nova Scotia can boast of their fine fruit, and certainly they should be proud of that industry.

Let us remember that twenty years ago five hundred barrels was the annual output from the Annapolis Valley. Today, I am safe in saying, they are exporting thousands of barrels each year.

I believe, gentlemen, we have climate and land conditions that will enable us to grow apples just as successful as they do in any Province of the Dominion.

Poultry raising, too, can be made a source of income not to be forgotten. Just think! The price of turkeys in every town at Christmas was 25 cents per pound. Oh, you argue, if we all go into poultry raising we will over-crowd the market, and have it down to 5 cents per pound, as is now the pork.

Never worry on that score. Human nature goes quite a lot in extremes. Next year we will have about three-quarters the amount of pork that was raised last year, and up it goes again.

We are a mighty lot better off than our brothers in the West, because if wheat is low, or a failure, they are out altogether, whereas, we have many things to depend on.

I wonder what could be done to get more Clyde horses grown.

Why is it that 75 farmers out of 100 will patronize a cheap 1,000 pound stallion instead of a 1,600 pound Clyde? In the first case the colts, at three years' old, bring from $50.00 to $80.00 each, while those after the heavier horse sell from $125.00 to $175.00, and very scarce at that. I suppose it is on account of a dollar or so at the beginning.

If our Government would introduce the system of owning and placing Clyde stallions all over our Province, to enable men to use them at cheap rates, in a very short time we would find hundreds of dollars made from this source that is now out of reach.

While we are today discussing farm topics from a New Brunswick standpoint, we feel very strongly at heart for our beloved Canada. At the present time all eyes are watching for the result of the convention which met at Toronto during the last days of 1904. I refer to the meeting together of the Methodist, Presbyterian, and Congregational delegates to discuss the advisability of amalgamating the three churches, which is, without doubt, the greatest forward movement since confederation. Surely we are beginning to see that the morning star of the millenium noonday, in all its grandeur, will soon break upon us, when all creeds of the earth will work together for the uplifting of humanity. We are proud that we were born Canadians. We are prouder still that we belong to an Empire whose motto is, "Peace on earth, good will towards men." Let us, as Canadians, remember that we have the honor of being the right hand colony of that nation whose flag floats on almost every corner of the earth What an honor, then, is ours, we who are called upon to feed this great multitude. Let our ideal be, that we make two, yes, fifty blades of grass grow where only one grew before, and in doing this we will be building up homes of honesty, industry, and truth, the influences of which will ring out in the future for the betterment of all mankind.

HIS WORSHIP THE MAYOR.

Mayor Palmer, in response to a call from the chair, delivered a brief address, in which he cordially welcomed the delegates to Fredericton. He was not a farmer, and could not be expected to have much to say to the followers of that great industry. He quoted figures showing the wonderful increase that had been made in Canadian exports of dairy and general farm produce to the British markets, referring particularly to the city of Manchester. The Dominion and the Provincial Governments were doing a splendid work in encouraging the export trade, and inducing the farmers to adopt new and approved methods of farming. In conclusion, he heartily congratulated the president upon his able and patriotic address, and resumed his seat amid applause.

Mr. T. B. Kidner, Director of Manual Training for New Brunswick, rendered a vocal solo, and responded gracefully to an enthuiastic encore. Mr. Wm. Wilkes, later in the evening, favored the audience with a solo; the accompaniments being played by Miss Williamson. The musical feature added much to the evening's enjoyment.

VICE-PRESIDENT N. S. DOW.

Vice-president Dow replied to the address of welcome. He said the subject touched upon by His Worship was a most important one.

It was a fact that Colonial butter had to travel half around the world to reach the British market, while Danish butter could be sent there in a few hours. He referred to the great strides Canadian bacon was making in the English market, and of the benefit it was to the agriculturists of this country. The excellence of Canada's dairy product was not achieved without a struggle. First we had to look to the farmers to produce the milk, then to the maker to manipulate it properly, so as to secure a uniformily good article. The article must be good before we can realize good prices, hence we have some good men in the business—some of the best men in Canada today are engaged in the dairy business. Dairy exports have advanced from almsot nothing to one of the most important items. Not many years ago, the boy on the farm, that showed evidence of possessing brains, was at once fitted for the learned professions, or sent into business in the city; the dunce was considered eminently fitted to manage the farm. But times are changing, and the boy who is now conducting a successful farming business must exercise all the talent he possesses, and the farm is considered a fit place for the man of intellect.

He thanked the people of Fredericton for the comfortable quarters they had placed at the disposal of the Association; and assured the ladies and gentlemen, who so kindly furnished the musical part of the programme, that their efforts were greatly appreciated.

HON. L. P. FARRIS, COMMISSIONER FOR AGRICULTURE.

Hon. Mr. Farris was received with applause. He said it always gave him pleasure to meet the farmers of New Brunswick, especially in their annual assembly. He congratulated President Fawcett on his address, also Vice-president N. S. Dow, and His Worship Mayor Palmer.

The Department of Agriculture is doing the very best it can to promote the farming industry; of course, no person thinks the department is perfect, but with the means at command, good work is being done.

One work the department is now engaged in is the planting of Illustration Orchards. Already seven have been planted. Next summer it is intended to plant as many more—every section of the Province will have its Illustration Orchard. If the people of this Province are prepared to devote as much time and attention to their orchards as the people of Nova Scotia do, then the industry will be a success. At the Amherst Winter Fair, apples from this Province compared very favorably with Nova Scotia apples, a fact that pleased me very much indeed.

I am also pleased with the programme the Association has prepared for this meeting. I notice there is considerable attention given to the question of beef production. I am very glad of that, for I would like to see more beef produced. We have sections very suitable for raising beef, and, as head of the Department of Agriculture, I would be prepared to give beef raising all the encouragement I possibly could. (Hear, hear.) We have good dairy sections also, and dairying must not languish. We can grow sheep profitably: I would like to see more attention paid to that. There is nothing we can do to keep up the fertility of the soil better than by keeping sheep. With the prices of horses as they are, I know of nothing more profitable for the farmer than horse raising. There is a large demand for good carriage horses, and also for heavy draft horses; and, with the development going on in the country, the demand will not drop off.

The past season has been one of the most unprofitable for agriculturists that has been known for many years, due largely to a combination of circumstances over which they could exercise very little control.

The extremley cold spring, and very dry summer, with low temperatures prevailing throughout, coupled with low prices for many farm crops, were responsible for a poor yield, and, in many cases, poor quality, which necessarily meant small profits. Any one who has carefully studied the conditions of the weather since May last, and carefully noted the number of hours of sunshine during the months of June, July, and August, and the amount of rainfall, together with the low temperatures, would have no reason to suppose that the returns from farm crops would be any different from what they were. As an example of this, during the month of May, there was four and a half inches more rain than the average for the past 31 years, and the temperature during this month never exceeded 80 degrees, and even went down as low as 30 degrees. It is needless for me to say that during May all farm crops are put into the ground, but with such conditions prevailing, it was almost impossible for farmers to plant as large an acreage as they would under more favorable conditions. Then, during the months of June and July, with a larger average of hours of sunshine than prevailed for years, and with four inches less rainfall than we usually have, together with low temperatures, you can readily see that the seeds sown during the month of May could not germinate rapidly, and a slow growth resulted. But to follow the season into the month of September, and I might mention the fact that the early frosts proved very destructive to many of the crops. However, this Province was not the only one working under these conditions, for on examining the trade returns for 1904, I find a shortage in wheat alone, for Canada, of over $11,000,000. In the Province of Ontario the yield per acre was 15.1 bushels this year as compared with 25.9 bushels for 1903. This report is for fall wheat, while the returns for spring wheat show a decrease in yield of three and a third bushels per acre, and a decrease in production of 1,125,00 bushels. The same may be said of many of the other farm crops grown in every Province of the Dominion, and I merely mention these facts to show that the farmers of this Province are not working under any more unfavorable conditions than their brethern in other Provinces.

Prices for farm produce, with the exception of dairy products, have been, and are very encouraging; but with a decrease of two and a half cents in the price of cheese during the summer and fall months, and a decrease in the price of butter for export of about one and a half cents per pound, the farmers in many sections did not feel like spending very much time or money in trying to induce their stock to produce larger quantities of milk, and on every hand throughout the Dominion we have the assurance that low prices have been the cause of a decrease in the output of dairy products of about $2,500,000. As far as New Brunswick is concerned, we find there has been a shortage in the output of cheese, but butter shows an increase over last year.

I would strongly urge the farmers, who are engaged in dairying, not to be at all discouraged by the showing made last year, for they might just as well abandon the production of hay and oats because of a temporary decrease in the output, as to say they will abandon dairying because of low prices for one season.

We must remember that the prices received for dairy products have, of late years, been extremely high; in fact, I am inclined to believe that had the prices been somewhat lower, our conditions would be better today in the old country markets than they are, from the fact that when the price of dairy products go up beyond a certain limit in England, the tendency with the people is to find a cheaper substitute, and from the best information I can get, this, to a certain extent, took place. However, it does not take very long, especially when low prices are maintained throughout the season, to get them back again to the use of this product.

It may be thought by some that our dairy interests are not advancing, but we have had encouraging reports year after year which show that the increase in butter, since 1901 up to the present time, has been in the vicinity of 875,000 pounds; and the increase in cheese during this same period amounted to about $25,000 per year; consequently, we maintain that the dairy industry is not lagging, and with the encouragement the farmers will receive from my department, the increase for the future will, I trust, be most encouraging.

DUNCAN ANDERSON.

I think, perhaps, I might say a little about draft horses. I believe, as your Minister of Agriculture has stated, there is plenty of room in the Province of New Brunswick for the breeding of a better class, and more horses. Where I live, we do not do much along the line of breeding light horses; we aim to produce the heavy horse, which we can sell for dray work. We always have enough of what we call agricultural horses for our farmers, and then we have some of what you would call general purpose horses, fitted for express work in the cities, or work on the farm, and, I think, in this Province there is much room for improvement along this line. During the time I was on Institute work in this Province, I met a number of buyers, who informed me that it was most difficult to fill the wants of the lumbermen alone. They were seeking horses weighing 1,400 to 1,500 pounds; they did not want them quite so heavy as the lumbermen with us want. I believe horses can be properly raised by New Brunswick farmers, and made to weigh 1,450 pounds, then put on the market as six years' old, and give a very good return.

My experience and observation in breeding horses shows that there are three principal points that we must never lose sight of. The horse must have good, sound, healthy feet, accompanied by a fair slope of pastern, and he must have clean, smooth hocks. Then I want a barrel with a capacity of holding food enough to make the whole thing go. I want it big enough to hold enough food to run the horse from morning to dinner time.

Forty years ago we bought our first team; previous to that we worked our farm with oxen. This team was a pair of two-year-old fillies, for which we paid $200 cash. I was a lad of fourteen at the time, and the team was put in my hands to care for and work. During the summer their work was general farm work, and in the winter they were kept constantly employed hauling cord wood to the town four miles distant. They made three trips a day, that would mean twenty-four miles, loaded one way with one and a half cords of long wood. One of those mares was the best horse we had until she was twenty-three years' old; the other one was done out at ten years' old—she was crippled in the front feet, and had a thick leg behind. The one had a good foundation to begin with, the other did not, and the result was one lasted twice as long as the other. In breeding or buying light horses, or any other kind of horses, remember that any one can put a top on them; that is, fix them up to present a good appearance, but the foundation is the thing that counts. A man often builds a house and puts a veneer brick front on it, and it looks as good as a solid brick house. I can put a veneer top on a horse for $30, but I cannot change his foundation, it has to be bred into him.

I do not know, Mr. Chairman, how long you expect me to speak, but I want to say this—I have found my greatest difficulty in farm life, to be the letting go of old systems, and I can make no headway until I can compel myself to abandon discredited systems for the modern ones. When I was able to let go, I went ahead, and I believe most of you have had some experience along the same lines. I can remember the time when we used to depend entirely upon fall wheat, then came barley, and then came a time when we could not sell our barley, and there was then a period of years when the farmers of Ontario were actually suffering. Then Dr. Saunders addressed us on the growing of clover, and I believe the keeping of live stock, and the growing of clover, has increased the fertility of our soils from twenty-five to thirty per cent. We could not have done this until we dropped the old methods. Look around and see what is worth letting go.

I was somewhat staggered when I came to the growing of roots, in your Report on Agriculture. In the entire Province, during the year

1903, you only raised 5,000 acres of turnips. If you are going to raise beef cattle, you have to have succulent food, and I do not know of anything that makes a more satisfactory food for live stock (I am not speaking as a dairyman) than turnips.

What is the outlook for the farmers of Canada? We heard tonight of the world's markets, and what the dairymen had done in Manchester. Who has been our strongest competitor in the markets of the British Isles? The United States. But the home wants of the United States are rapidly increasing, increasing as her population increases, and in a few years that country will not be able to produce enough stuff to supply her own people. Not long ago I read in a newspaper that 50,000 bushels of wheat, shipped to Great Britain, were reshipped to the United States, because there was a scarcity. The United States does not supply eggs and poultry enough to supply her own wants; and before twenty-five years that great nation to the south of us, which is now our strongest competitor in the world's markets in the shape of food stuffs, will require nearly everything she produces to supply her own people. To my mind, there are three distinct reasons. The first is this, nearly all her new land is taken up, thousands of her farmers are leaving the country and coming to our Northwest; second, through bad farming, her land is becoming exhausted from over-cropping; and, third, and most important, her population is increasing at such a rate, with no more new land being taken up, and the old becoming exhausted, before the next twenty-five years she will consume nearly all the animal and agricultural products she produces. Our strongest competitor will, therefore, soon cease to trouble us. The population of the United States increased 13,000,000 in the last ten years. But, there is Asia, with its immense tracts of land, and that great country India, where men can be had for trifling wages. Look at the map of Russia, and you will see that nearly all the rivers flow toward the Arctic Ocean, which is only navigable for two months of the year, and even when Siberia is made to produce wheat and other products, they will have the long, expensive railway haul to get their products to the seaboard, and we will always have that in our favor, and they will always have it against them The poor Hindoo does not seem to have "gumption" enough to take advantage of his opportunities; they have periodical famines, and you may rest assured that the Hindoo will never give any serious competition to the Canadian farmers in the world's markets. The competition we will have to meet will come from South America. The Argentine Republic will be the great competitor.

The young men never had such a chance of making a success of farming in Canada as they have today. I know farm work is hard at times, but nothing like as hard as when this country was first settled, as the president mentioned in his address. Everything had to be done with the axe and the flail; there were no labor-saving machines; the hardest work today is to get the manure from the stable to the fields. There is no line of work that the intelligent, bright, active Canadian boy can take up that will give him a surer income, and secure him a safer competency than to own a piece of land in any part of Canada. The older I get, and the more I go around, I have come to the conclusion I did not make a mistake when I stuck to the farm as a boy. The man who places his educated labor on the market is shoved aside before he has reached the age of fifty, to make room for a younger man. If there was a vacancy today in the gift of any large corporation in Canada, I do not know one corporation that would put a man in that position who was over forty years of age. The young men are wanted everywhere, and what is becoming of the man passed fifty years of age? Two men place their labor on the market; both are educated; one is twenty-five years of age, the other is fifty; everything else being equal, who will get the position? The young man will get it every time. This dead line is never reached on the farm. A man may not be able to work as actively at fifty as at twenty-five, but he can use his brains. He can put a hired man at the hardest work, and still gain a competency out of the farm. While the tendency is from the country to the town, I want to say that I believe there is much room at the top of the farming ladder, much more than in any other line of work I know of.

Just a word about the early settlers of Canada. Those men, aye, and those women, who, after passing six or seven weeks in a sailing vessel crossing the ocean, landed on the shores of Canada to tramp through the woods, carrying their small necessities on their backs, to start life in the new world, and carve out homes for themselves and their children. I do not know of any class that merit having a monument erected in their memory than these early pioneers. All honor to them, ladies and gentlemen; most of them are dead and gone, but we, who reaped the fruit of their labors, should keep their memory fresh.

Professor Shutt followed Mr. Anderson, complimenting this Association on its usefulness as an organization. He favored the old system of sending delegates to attend these metings, cautioned the farmers to be careful in buying stock foods; to know, if possible, the relative value of each, and feed accordingly.

After singing "God Save the King," the meeting adjourned to meet tomorrow morning.

A. G. DICKSON, Rec. Sec'y.

MORNING SESSION.

January 26th, 1905.

Meeting opened at 9.45 o'clock, President Fawcett in the chair. Minutes of last meeting read and approved.

The president appointed the following committees:

Nominating Committee—F. W. Russell, George Clark, Albert Colpitts, A. R. Wetmore, R. R. Patchell, Rev. Hunter Boyd, Henry Wilmot, Alfred McAlpine, A. D. Thomas, P. Strong, J. F. Tweeddale, and B. R. Violet.

Finance Committee—W. S. Tompkins and Henry Wilmot.

The treasurer submitted his report, which was, on motion, received and handed to the audit committee. It was moved by W. S. Tompkins, seconded by Mr. Currie, and carried, that the president appoint a committee to enquire into the cause of the waning off of the membership of this Association and report. The following committee was appointed: Howard Trueman, W. S. Tompkins, and George E. Fisher.

It was ordered that the president's address be received and published.

Mr. F. W. Broderick, of the Seed Division, Ottawa, was introduced, and addressed the meeting on the Improvement of Seeds, as follows:

Mr. Chairman, Ladies, and Gentlemen:—

Before opening my address, I would like to say that I consider it a great honor, and a rare privilege, to be given the opportunity of addressing such an intelligent gathering, composed, as it is, of the leading men engaged in the various branches of agriculture and dairying in the Province of New Brunswick at the present day. We have gathered here for the purpose of discussing together various questions which have to do with our agricultural advancement. It is essential, if we wish to make permanent progress as an agricultural country, that we get together, from time to time, and discuss these various matters which have such an important bearing upon our occupations as farmers.

The Province of New Brunswick has an important future before it as an agricultural country. Her soil is as fertile as any in the Dominion, her climate favors the perfect maturity of the various cereal and root crops, and the ease with which her products can be shipped to the foreign market, on account of her position, gives her a decided advantage over her western sisters. A great deal depends upon ourselves, however, whether our Province advances or not. Unless we keep abreast of the times, study the conditions of our soil and climate, and follow the most advanced methods in our farming operations, we will make but little material progress.

We will have under discussion, during the progress of this convention, subjects dealing with the improvement of the various branches of agriculture. Some here, no doubt, will be more particularly interested in the improvement of our live stock, others in the advancement of the dairying industry, others in the improvement of our educational system; but, I think that all present will be more or less interested in any movement that has for its object the improvement of our farm crops, so we will particularize and deal only with this phase of the subject. It is needless to say that any increase in the yield of our farm crops adds much to the wealth of our country.

There is, in round numbers, according to the last census, about twenty millions of acres under field crop in the Dominion of Canada at the present day.

Saying we were to increase the yield of every acre of that land under crop by one bushel per acre, that would mean twenty millions of additional bushels of farm crop for the farmers of Canada to sell every year. Let us get an estimate of the value of this crop We will put the average price at thirty cents per bushel. That means that the farmers of Canada would have an additional six million of dollars in their pockets every year, for the effort they would expend in increasing the yield of their farms by one bushel per acre.

The question then arises, how are we to accomplish this? Are our farms not producing all they are capable of producing at the present time? I do not think there is a farm in Canada, be it ever so well farmed, that could not be made to increase its yield by from one to ten bushels per acre.

A great deal, of course, can be done to improve our farm crops by judicious manuring. If we wish to obtain good crops, we, of course, must have an abundance of plant food in the soil. The growing plant, unlike an animal, cannot move around to obtain its supplies of food. It can use only that which is within reach of its root system. Hence, if the supplies of food are small, or the root system poorly developed, the plant must necessarily be small and unproductive. However, I should like to say that this question of manuring is one of great importance to the farmer. I venture to say that a great deal of money is spent every year by our farmers, in the attempt to keep up the fertility of their farms, from which little or no results are ever obtained.

The system of rotation followed, and the amount of cultivation to which the land is subjected, have also a very marked influence on the crop. To deal at any length with either the subject of rotation of crops or soil cultivation, would require considerable time, and, I think, would be quite out of place in this address. I wished simply to mention them, as these factors all have an effect on the crop.

The subject to which I wish more particularly to direct your attention, is the importance of good seed in the production of farm crops. We have a great deal yet to learn of the important bearing that the quality of the seed used has on the resulting crops. I think I would be quite safe in saying that very few of us have given the subject of seed improvement the serious consideration that it merits.

We have learned, through recent investigations, that various desirable characteristics may be fixed and reproduced in plants by following up a careful, systematic selection of the seed. Size, vigor, productiveness, early maturity, and resistance to disease attack are among the qualities in plants which may be influenced by seed selection. In this we are only following out the great laws that undelie nature's methods —that of natural selection. If we look to the forests, or the beasts that roam the forests, we see the great fight going on — the struggle for existence. The weak and undeveloped, unable to keep up the fight, must die, and only the strong and vigorous live and perpetuate. Thus, nature has made provision against deterioration taking place.

The breeders of live stock have turned these principles to good account in the improvement of the live stock of the country, many of the improved breeds of live stock having been developed in the hands of men, skillful in the application of these principles, to the breeding of live stock. These principles also are being turned to good account in the improvement of our farm crops. The object of our work, in the improvement of plants, is to secure bigger crops of better quality.

Addresses which have been delivered before this association in times past on this subject have dealt more particularly with the value of seed selection in the improvement of the various grain crops. Most gratifying results have been obtained from selecting seed of the various grain crops. Let me quote the results of experiments, conducted by Prof. C. A. Zavitz, for a period of eleven years, in the systematic selection of seed oats. Three classes of grain were selected, namely, large plump seed, light weighing seed, and hulled seed. The selections were made each year from the crop which had been produced from seed of the same class the year previous; that is, the large seed was selected from a crop produced from large seed, the light from a crop produced from light seed, the hulled from a crop produced from the hulled seed. The results, after the eleventh year of selection, were as follows:—Yield per acre from the large seed, 77 bushels; light weighing seed, 58 bushels; and hulled seed, 72 bushels. From these experiments we learn that the large, heavy seed produced over nineteen bushels of grain more per acre than the light weighing seed. It also produced grain that weighed over seven pounds more per measured bushel. From the results of these experiments, I think we can safely conclude that the increased yields gained with cereal crops, by keeping up from year to year a systematic selection of the seeds, will repay all outlay for labor and expense in obtaining good seed.

I would like to say, however, that the grain crops are not the only crops that are improved by a selection of the seed. There is probably not another crop that shows improvement more quickly from a selection of the seed than Indian corn. The method employed in the selection of the seed of this crop is comparatively much easier than that employed in the selection of seed of the cereal crops (such as wheat, oat, and barley). The selection is done while the corn is in the ear. The lines of improvement followed in the selection of seed of this crop have been two. (1) To improve the yielding qualities of the crop. (2) To increase the protein content of the grain.

The corn grain ordinarily contains a large percentage of starch—fat-producing food—and very little protein, or muscle-producing food. The Illinois Experiment Station have carried on a number of experiments in corn breeding by seed selection to increase, if possible, the protein content. Corn ordinarily contains about 10 per cent. of protein. By this system of breeding, by seed selection, they have produced a corn that grades as high as 15 per cent. of protein.

But you say: "It is out of the question to talk of raising corn successfully in the Province of New Brunswick." I think, however, that corn can be raised here for silage purpose with a great deal of profit, if only the proper varieties are chosen. I would not recommend planting those late-growing dent varieties, but some of the quick growing flint varieties, as Eight Rowed Yellow, or common Canada Yellow, Smut Nose, Western Beauty, White Glaze Early.

During the last twelve years the total acreage under corn in Ontario has been increased by about 115,000 acres. A large portion of this increased acreage, devoted to the growing of corn, is in districts considerably north of what was hitherto regarded as the northern limit of the corn belt.

Of course, a part of the supplies of seed for this immense acreage are obtained from the southern portions of the Province. I think, however, there are locations in New Brunswick, especially along the river valleys, where corn may be successfully matured for seed, which could be supplied to other districts further north for the general planting. I do not think that the people of New Brunswick should be discouraged because they cannot raise those late-growing dent varieties successfully, but should turn their attention to cultivation of the earlier-maturing flint varieties. There is no crop that will give better returns, acre for acre, in the production of succulent food for live stock than corn.

I should like, also, to touch on the importance of seed selection with potatoes and root crops. The potato crop in New Brunswick is a very valuable crop, and any improvement in that crop would bring a large return to that country. In the year 1903 there were 34,500 acres under potatoes in the Province of New Brunswick. The yield was about 4,700,000 bushels, an average of 136 bushels per acre.

Let me quote the results of experiments which were conducted by Prof. C. A. Zavitz, for a period of eight years, in the continuous selection of seed potatoes, and we may be able to reach some interesting conclusions. Four grades of potatoes were planted, namely, large whole, medium whole, small whole (marketable) and small whole (unmarketable). The following yields were obtained from the different classes:

Large whole,..	199 bushels per acre.
Medium whole,...	173 bushels per acre.
Small whole, marketable,.. ...	116 bushels per acre.
Small whole, unmarketable, ...	99 bushels per acre.

the larger size yielding 26 bushels more per acre than the medium sized; 83 bushels more per acre than the small marketable; and 100 bushels more per acre, or over 100 per cent., more than the small unmarketable.

Let us suppose we increased the yield of the whole acreage in potatoes in New Brunswick by 5 bushels per acre; that would mean 172,500 bushels potatoes more per year; valuing these at 40 cents per bushel, would mean an increased revenue of $69,000 per year to the Province. But some one will urge: "If we use all large potatoes it will cost us as much for seed." Not necessarily, if the seed is cut and one piece planted to each hill. Thirty bushels of ordinary sized potatoes, of four to a pound, cut in two and planted in drills, one foot apart in the drill, and the drills thirty inches apart, will cover one acre. One large piece planted singly in a hill is much better than a number of smaller pieces.

I have endeavored to point out the importance of seed selection in the improvement of cereals, Indian corn and potatoes; I would like, also, to add that a great deal can be done to improve the root crops by a careful selection of the seed. The following results, which have been obtained from a series of experiments extending over a period of years in the selection of root seed, will go to prove that the success of the crop depends very much on the quality of seed used. The selections each year were made from good commercial seed, three classes being made, namely, large, medium, and small seed. I shall quote the results of these experiments in detail:

CROP.	No. Years of Experiments.	AVERAGE YIELD.		
		Large Seed	Medi'm Seed	Small Seed
		Tons.	Tons.	Tons.
Sugar Beets, ...	4	24.0	23.1	16
Mangels, ...	5	33	30	22
Swede Turnips, ...	4	14	12.5	5.5
Fall Turnips, ...	3	23	19.5	12
Carrots, ...	5	24.5	22	16

We can notice in these experiments a big difference in the crop from the different classes of seed. The large Sugar Beet seed gave eight tons per acre more than the small; Mangels, eleven tons; Swede Turnips, eight and a half tons; Fall Turnips, eleven tons; and Carrots, eight and a half tons. Do you think these results would warrant us in giving considerable attention to the selection of the seed of these crops?

A few words as to the best methods of seed selection. For cereal crops, I think the work can be done best just before harvesting, when the crop is standing. A few hours spent at this season in the selection of the best heads will furnish sufficient of the best grain in crop to sow a fair sized seed plot the following year. The selection of seed should be continued from year to year from this plot. By following this system of selection for a few years, there would be created on each farm a supply of the very best seed obtainable.

Indian corn should be selected in the ear while the crop is still standing. At this season better opportunities are afforded to judge of the maturity and the desirability of type of corn which is being selected. Seed potatoes can probably be selected best while the crop is being harvested. Only those tubers that are well matured, and conform to the proper type, should be chosen for seed.

In the selection of the seed of field roots, a difficulty presents itself with which we did not have to contend in the other crops. Very little root seed is home grown; hence, we do not have an opportunity of learning anything of the previous history of the seed we are purchasing. I think if the farmers of Canada would raise their own root seed, selecting only the best roots they can obtain for the production of seed, they would do much to improve the quality and yield of their crops.

The present indiscriminate method of handling seeds through seed stores is not a good one for the farmer, and is to be discouraged. Seeds produced from stock of very inferior quality are sold together with seed from better stock, the dealer himself ignorant of the nature of the stock from which the seed was produced.

A movement is at present on foot to encourage the sale of a better class of seeds; that is, through the medium of spring seed fairs. Several of these fairs have been held in the Maritime Provinces during past years, and have met with a very fair degree of success. I think, however, their value as a means of disseminating high class seeds has been very much underestimated. I do not think there is any other better method of getting an exchange of good seed than through these fairs. Local societies could do a great deal to encourage the "Good Seed Movement" by holding one of these fairs every year.

Senator Perley, for Wolseley, N. W. T., coming into the meeting, was invited by the president to the platform to address the meeting. He was pleased to say that he took an active part in organizing this Association some thirty years ago. He advised the farmers of New Brunswick to take pattern by the farmers of Ontario in farming. He gave an outline of the way they farmed in the West. His address was very practical and interesting.

PREPARATION OF THE SOIL FOR SUCCESSFUL CROP GROWING.

Mr. R. Robertson, Manager Experimental Farm, Nappan, N. S., before taking up this subject, expressed the pleasure it was to once again meet the members of the Farmers' and Dairymen's Association of New Brunswick, and of being afforded an opportunity of addressing them. He did not propose to make a formal address; such had never been his custom; but he hoped to bring about a good discussion, and in that way bring out many useful ideas.

He had listened with a great deal of pleasure to Senator Perley's description of life and methods of the great Northwest. In the West they are bountifully endowed; we, in the Maritime Provinces, have to exercise a good deal more intelligence in order to make our farms yield us a good living.

The population of the country is four-fifths farmers, and these farmers are the producers of the country; consequently, the progress and prosperity of the country depends upon the agriculturists. We also know that the live stock industry is the foundation of farming industry—that is perfectly true. The live stock industry is then the most important industry, and that industry depends, first and foremost, on the cultivation of the soil, the ability to grow crops in feeding quantities for beef, butter, and animal produce. Our Western farmers have greater advantages than we have; they have the plant food product of centuries, sometimes laying so deep that you cannot dig a well deep enough to get through it. In Ontario they have not so much, and they have resorted to using their brains and intelligence to conserve what they have. It may be possible they have enough plant food in the West to keep them going for two hundred years; if so, so much the better for them. It is only a matter of time, more or less, even in the Northwest, until the farms there will have their fertility exhausted. The upper and lower Canadian farmers have recognized long ago that they would have to adopt some system to keep up the fertility of the soil, if not to raise it. It is a harder job, and demands more intelligence to bring the fertility back to where it was years ago, than to conserve what we have. The Ontario farmers, to use a slang expression, "dropped into" that some thirty or forty years ago. From necessity, they were obliged to learn to farm, and it was well for them they learned to conserve the fertility of the land, and to keep up their crops. Our Western farmers are that much better off,and while I do not think we can drop off cultivating our intellects while the farmers in the West are pouring crops into the market very much easier than we can here. It is a fact that the prosperity of a country depends first and foremost upon the cultivation of the soil; getting all crops out of the soil at proper paying quantities. The ordinary farmer must have a margin of profit when he markets his produce. In the live stock industry, the great thing is to produce food for the stock in paying quantities. It matters little if we send out $100,000 worth of bullocks, if it cost us $110,000 to produce them. Personally, I am as much in favor of the beef raising industry for the Maritime Provinces as I am of some of the other industries; but they can raise them much cheaper in the Northwest than we can. The cultivation of the soil, and the raising of crops in paying quantities, is practically everything. At Nappan, I have had a good opportunity of experimenting with the different kinds of soil, and I am free to say that I never saw any soil in my life that was so very, very poor. It is true our soils contain plant food sufficient for 50 to 200 consecutive crops; the trouble is to get the soil into a state to produce these crops. Our land would not grow buckwheat until after we had given it the proper treatment. It will not grow crops until we put something into it; and I am perfectly satisfied the lack of humus in our land is of more importance than lack of fertility. Therefore, we are bending our energies in trying to get into the land something of a vegetable nature, which is humus, and this humus puts it into a state to grow crops; when we get the land filled with humus we get great crops of great value. We have not as good opportunities at Nappan as they have at the other farms, and I have been amazed to compare the crops we grow with those of these farms, particularly in roots. Even in grain crops we compare favorably. I have lived and farmed in the Province of Quebec, where we get the best quality of grain, and I am ready to state that we can grow it at Nappan of as good quality as anywhere in Canada. Our figures and experiments show we can grow as big crops as anywhere else. It may be thought that we have better chances for growing crops at the Experimental Farm than has the ordinary farmer. I do not think that is true at all; I do not think we do anything so far as the cultivation of the land is concerned that could not be done by the man farming right alongside of us. We carry on a system of cultivation and rotation. Allow me to say a word about the advantage they have in the West of sowing their crops a very short period in the spring. My opinion is you cannot lose a moment in seed time. Ploughing our land in the fall is the very first point in considering the question of cultivation, whether for grain or root crops; I will make one exception, the corn crop, which should be ploughed over in the spring. I am not prepared to go to any extreme in favor of growing corn in the Maritime Provinces. We can grow an average of 1,000 bushels of turnips per acre as easily as they can 800 anywhere else. I divided the hoed crops into three parts—mangels, turnips, and corn, and I thought I was doing it fine. Today I would like to have one-third of my cultivated farm in hoed crops of some kind every year. I will even go further, and say that I would like to have fifty per cent. of that one-third in turnips, and the balance in mangels and corn. I think I know the value of corn about as well as the average farmer, but I would grow twice, if not four, times as much turnips as corn. After eight years experimenting, I have come to the conclusion that we can grow in the Maritime Provinces about as many mangels per acre as we can turnips, but I also found it takes a good deal more ability to do it one year after another, but we can grow turnips almost like weeds. There is something wrong somewhere with the man that cannot grow 800 bushels of turnips to the acre.

Question—What do you consider the relative feeding value of mangels and turnips?

Mr. Robertson—Prof. Shutt can answer that question much better than I. I would simply have to quote his figures.

Prof. Shutt—With reference to the examination of roots generally, I cannot answer decidedly yes or no. We have been examining roots for six years, and we find there is as much difference between the different varieties of mangels as there is between mangels and turnips. There is as much difference between them as there is between Jerseys and Shorthorns. In making a comparison between mangels and turnips, one would have to know exactly just what varieties we are speaking of. There is ten per cent. of dry matter in roots, but there is a variation of between two and three per cent. of dry matter between different varieties of mangels and two between turnips, so I would not like to say.

Question—Take the average?

Prof. Shutt—Taking the average, I should say there was more feeding value per hundredweight in mangels, but I should like to qualify it, of course.

Mr. Anderson—If turnips are planted late in June, and make a rapid growth during the following months, they are hardly ripe. If they are planted early in June and ripen, is there more value in the ripe than partly ripe turnip?

Prof. Shutt—Yes, there will be; it is difficult to explain that in a moment. In the ripe turnip the nitrogenous matter is converted into protein, which is of a higher food value. You find the same thing in regard to Indian Corn exactly.

Mr. Robertson—As far as I have been able to find out from the figures of our scientists, I could never find there was much difference between the value of mangels and turnips. I have thought many times that I could get better results from turnips than mangels, but I would not like to put that up against experiments. Turnips are better in the early part of the season, but the longer we keep mangels the better they are. So we keep a certain proportion of both turnips and mangels to feed our cattle.

Coming back to the cultivation of the soil, were I in a position to do so, I would have a three-year rotation, although some farmers may not always be in a position to do so. When I get a three-year rotation, I am able to manure twice inside of three years. In the application of manure we have two kinds of crops; we have the seed-making crop, and the other is hay, roots, etc. Our farms are our banks, and the manure is the very best asset we have, but, unfortunately, many of us make a very poor use of that asset. I have said that our crops are divided into two kinds—one class is biennial, and the other is making seed. "Big crops, poor potatoes," is an old saying which I think is true under certain circumstances, and the very opposite is true under certain other circumstances. I am not advocating the growing of potatoes on poor land, or without manure. I want potatoes on the richest land I possibly can get, full of humus; I want the quickest growth in the early age of the plant. We will take two pieces of land, one rich already, perhaps you have been growing roots on it, or you are on your second or third rotation; the other piece of land has been sapped year after year of the vital element of humus until its heart is broken. You plant a heavy coat of potatoes on there, and give a very heavy coating of manure. About the highest we ever give is from 20 to 25 tons per acre; many of our farmers double that. We all know that manure is of no earthly use to the land until it has some rain, and the elements of fertility is absorbed; it is months before that manure is of any good to that soil in this country. The year before last it was the end of July before it amounted to anything.

Question—How do you apply your manure?

Mr. Robertson—In the spring, manure, on the average, is worth about as much fresh as it is rotted, and there is a great loss of manure when rotting. We do not carry manure over. Eight thousand pounds of green manure amounts to 2,500 pounds when rotted. We apply manure as green as we possibly can, and then spread the manure in the spring; plough and cultivate, and there it will be for our roots. We plough manure in, using a disc harrow and smooth harrow, as the case may be. We do not plough any deeper than we possibly can when turning in manure. We plough simply to mix it with the earth. There is no system more popular in Ontario today than hauling the manure on the fields in the winter. I have not found it to work so well with us, from the standpoint of time being money, more so in the Maritime Provinces than Ontario or the West—we lose a great deal of time in handling it in that way.

AFTERNOON SESSION.

January 26th, 1905.

The president called the meeting to order at 2.30 o'clock. Mr. W. S. Tompkins was introduced and spoke on the subject of "How can the Farmers of New Brunswick Produce More and Better Beef." He claimed that the farmers were leaning too much on their other industries, such as lumbering, fishing, etc. Why is it that $200,000 was paid out last year for beef? There is no excuse for this; it is a reflection on the farmers of New Brunswick. Breed of cattle is the first consideration in producing beef; feed, care and marketing follows. He believed firmly in the general purpose cow. Keep the cow from which you can grow a steer to 1,000 pounds or more at two years, and will also give as much milk as the average dairy cow. She is the cow of the new agriculture.

Mr. Tweeddale, of Victoria County, and Mr. Duncan Anderson, spoke on the same subject. A lively discussion followed, in which many in the audience took part.

The session throughout was a very interesting and profitable one.

EVENING SESSION.

January 26th, 1905.

The president called the meeting to order at 8.15 o'clock. The minutes of the morning and afternoon sessions were read and approved.

Mr. Hubbard reported from the Committee on Agricultural Education.

Dr. Inch addressed the meeting next. He gave statistics of the working of the Schools in the Province; pointed out some of the advantages of the consolidated school system; hoped soon to see many of those schools working in this Province.

Prof. John Brittain gave an excellent lesson to a class of twelve boys and girls, which was much enjoyed by the meeting. A motion was carried unanimously that Prof. Brittain, Mr. Perry, and the class of scholars be made honorary members, and be presented with badges of the Association.

THE KINGSTON SCHOOL.

Mr. A. R. Wetmore, chairman of the Kingston Consolidated School Board, next spoke in regard to the work at the consolidated school. He said that the school had only been in operation for one term, but the result was all that had been hoped for. He was lately informed by the principal that he expected soon to have a full high school course of study open for the children. Mr. Wetmore next gave a brief description of the village of Kingston, and also of the new school building. There were five teachers at the school, three being University graduates, and they were enthusiastic in their work. The principal was a specialist in nature studies, and would instruct the pupils as Mr. Brittain had done. All the rooms in the building were neat and tasty, as to be an object lesson to every child. A teacher of household science had not yet been obtained, but one was expected in the near future. The method of transporting the children to and from the schools in vans was most satisfactory, and children who rode in them suffered but little from the cold. With one exception every van had been able to reach the school house every day this winter. After a severe rainstorm on one occasion the road over which two vans had to pass was flooded out, and the vans were compelled to return home. It has been a pretty rough winter, and the fact that the vans have been able to make every trip but one was a most creditable record. There had been considerable opposition to the school at first, but it was fast dying out, and now ninety per cent. of the ratepayers were in favor of it. The Christmas examinations had been well attended, and the contrast with the old state of affairs was very marked. The number of pupils who attended the seven schools which were united, was 125, and now it is 170. The average daily attendance was 50 under the old system, now it was 150. The change is due to the fact that the children are taking a greater interest in their work, and the difficulty of getting to school on stormy days had been overcome. The farmers of the district say that it is next to impossible to get their children to remain home a day from school. About twenty pupils from outside places, including several adults, were in atendance at the school. It would probably cost more to run the consolidated school than it did the seven other schools, but there was no comparison in results.

Prof. Shutt, of Ottawa, spoke on "The Value of Nature Study." He showed the many reasons why a child should be educated along these lines of nature study, not minimizing book learning, it assisted in making them a clear, correct observer.

Mr. Tompkins reported from the audit committee. On motion the report was adopted.

Mr. Tompkins reported from the agricultural committee. He said the committee had not had time to get the necessary information to make a full report.

Mr. Tompkins moved (it was seconded and carried) that the present committee gather as much information as possible, and be allowed to sit until next year.

Meeting adjourned, to meet at 9.30 a.m.

MORNING SESSION.

January 27th, 1905.

The meeting opened at 9.45, the president in the chair. The minutes of last meeting read, and with the correction of Mr. Tompkins' report, they were approved.

The report of the nominating committee was read by the president. It was moved, seconded, and carried, that the report of the nominating committee be adopted, and the officers named elected as follows:—President, C. F. Alward, of Havelock, N. B.; Vice-president, J. F. Tweeddale, of Arthurette, Victoria Co., N. B.; Recording Secretary, N. S. Dow, of Woodstock, N. B.; Treasurer, George E. Fisher, of Chatham, N. B.; Corresponding Secretary, W. W. Hubbard, of St. John, N. B. County Vice-presidents:—St. John County, Dr. T. Fred. Johnston; Queens County, J. W. Foshay; Kings County, A. R. Wetmore; Sunbury County, Henry Wilmot; York County, John C. Gilman; Carleton County, William J. Owens; Victoria County, C. R. Inman; Madawaska County, Maxane DeRosier; Restigouche County, J. E. Stewart; Gloucester County, P. J. Power; Northumberland County, Alex. G. Dickson; Kent County, Robert Lennox; Westmorland County, Albert Anderson; Albert County, S. S. Ryan; Charlotte County, James Russell.

The president thanked the Association for the assistance rendered to him during his term of office. He invited Mr. Alward, the newly-elected president, to come to the platform and take the chair. Mr. Alward, in taking the chair, thanked the Association for the honor conferred upon him in electing him to be president.

Mr. Harvey Mitchell was invited to address the meeting on the subject, "The Manufacture and Marketing of Dairy Produce." Although the past year has been an off year as regards prices of dairy products, the dairymen should not be discouraged. He pointed out how essential it was to have perfect cleanliness throughout the handling of the milk, from start to finish, and to keep the buildings in good repair. A good discussion followed, in which many took part.

Mr. N. S. Dow spoke along the lines of the last speaker, Mr. Mitchell.

It was carried that the meeting be called sharp at 2 o'clock, and Prof. Shutt be given an hour in which to deliver his address, and the same time devoted to each consecutive speaker.

Mr. R. Robinson was invited to take up the subject from the programme of yesterday afternoon, via essentials to success in Dairy Farming. Co-operative system is essential to success in dairying; another essential, keep enough cows on the farm to make it worth while to look after them properly. He pointed out many ways by which dairying could be made a success

Meeting adjourned.

AFTERNOON SESSION.

FREDERICTON, N.B., January 27th, 1905.

Meeting opened at 2.27 o'clock, the president in the chair. The minutes of last meeting read and approved. Prof. Shutt was introduced by the president, his subject being—

HOW WE MAY ECONOMICALLY INCREASE THE FERTILITY OF THE LAND.

Mr. President and Gentlemen:—

The subject is not contraversional, nevertheless, he hoped it would prove interesting. It is of the utmost importance, and, indeed, lies at the foundation of farm work. The man who is engaged in making beef is involved in it as much as the dairyman or the man who is making mutton or bacon.

The continuous growing of crops, and more especially when we are restricted to one or two crops, leads to a diminution in the yield. Any one who has had any experience in farming knows that sooner or later, and generally before very long, there is a diminution in the yield. When we compare our yields in this country with those of other countries less favored than we are, we must admit that there is plenty of room for improvement in this respect, and that our yields are altogether too low. There are many reasons to which we might attribute this; one is that we have too much land. It is much better to get thirty bushels off one acre than off two acres. This is my contention, and I have been working in that direction ever since I have been associated with agriculture.

It might be well for me to say a word in regard to what I consider fertility, and in regard to soils in general. We also want to know what are the requirements of our plants and crops. After learning the fundamentals, we can intelligently consider how our farm yields may be economically increased.

To be very brief, our arable soils, that is, soils from which we obtain crops, are a mixture of disintergrated rock material, sand, clay, and vegetable matter. Sand and clay come from the broken-down rock surface which once covered this globe. The earth was once a molten mass, which gradually cooled and formed a solid rock surface, and then by various ways and under various conditions, the rock surface became disintergrated, but was not fit for the growing of what we would call the higher plants of farm crops. Successive generations of these little plants gave to our soils what is known as organice matter. Finally, the soils became in a condition suitable for the growth of grass, roots, trees, and the other forms of vegetable life. That is what our soils consist of, and why they are suitable for our work today.

We must not think that our soils consists exclusively of mineral and vegetable matter; there is something more than that, something of great importance. It is only of recent years that we have come to consider the soil as something that is alive. For a long time we considered it simply as a dead medium for supporting plants, but it is alive with microscopic beings. We are all familiar with the germ theory, that certain diseases are caused by germs or bacteria. But all bacteria are not of that nature; some of them are useful and some are injurious. A fertile soil is full of these germs or bacteria; and we have come to look upon them with such a degree of importance that when we examine a soil we ascertain to what extent this microscopic life is present, in addition to finding out how much potash, phosphoric acid, and nitrogen it contains. We always find out how much bacteria is contained in a certain area. They are among the important agents to be considered in converting soils into such forms as are suitable for the growing of our higher crops. It is only of late years that we found out that the richest soils contain the largest amount of bacteria. These bacteria require food just the same as animals, in order that they may grow and multiply.

Question—Before you leave that point, do you find them more plentiful in rich or poor land?

Prof. Shutt—In well drained soils the bacteria are more numerous.

Question—Are they near the surface, or do they go down very deep?

Prof. Shutt—They are near the surface; but it depends upon the character and aereation of the soil. We cannot expect to find bacteria in soils composed of clay or sand, or a mixture of clay and sand. They are living things and require food. They feed on the vegetable matter in the soil which is in a semi-decayed condition, which we call humus. If humus is not present, the bacteria will not be there. We find the greatest development of bacteria in soils where there is a large amount of humus, as well as warmth and air. The function of bacteria is to convert food into available form for the plants.

Plants take a good deal of their food out of the air. Carbonic acid gas is taken up by the plants and converted into woody fibre. But we have nothing to do with this; it does not concern us as practical farmers; we have no control over it, but it is the food the plant takes from the soil to which we must direct our attention. The food the take in through their roots must be in the form of a solution. Suga and salt, when put into water, immediately dissolves, and we have a solution of sugar or salt, as the case may be. That is where the bacteria comes in. We heard yesterday that a certain soil contained food sufficient to grow crops for 200 years. That is true; there is no soil but contains plant food in abundance, sufficient for hundreds of years, no doubt, but yet very poor crops may be gathered from it. The reason for this is that the plant food is not in an available condition. We have analized many soils, and I will undertake to say there are between three to seven thousand pounds per acre of these three important constituents—nitrogen, potash, and phosphoric acid, to a depth of nine to twelve inches in our soils. How much of this do we take out? Probably sixty to a hundred pounds in a year with a good crop. It has been very wisely ordained that this food is not immediately available, otherwise we would have exhausted it long since. It takes good management and manipulation to make it available. From our experiments we know that there are from 3,500 to 7,000 pounds of nitrogen in the first twelve inches of soil, yet of that amount we know that the amount immediately available for plant food is only 25 to 50 pounds per acre at any one time. Of course, there is a constant conversion going on all the time, but when you hear people talking of a large amount of plant food contained in the soil, you should enquire if that food is immediately available. There is food which is digestible, and food which is indigestible, and the indigestible is of absolutely no benefit to us whatever; it may pass through the system, but it does nothing toward creating energy or repairing waste. Hence, our soils may be well stocked with plant food and yet not be fertile. In Canada we have very large deposits of phosphorate of lime, but, unfortunately, that phosphorate of lime is insoluable in water, and no matter how much we may grind and put on our soils, we receive no benefit whatever. We made some experiments at Ottawa to see if the phosphoric acid could not be loosened and made available, but without success. It is true, it could be done with oil of vitrol, which converted it into superphosphate, and the difference between the two is very different in the degree of solubility. I am using the word superphosphate in its correct scientific sense. Phosphorate of lime is worth about two cents per pound. After being treated with the acid, it is worth eight cents per pound. It is the same thing, only it has been rendered soluable in water. It has been converted from a low to a high-priced article. Bacteria are especially beneficial in converting nitrogen, and this we term nitrification. When you soils contain humus, warmth, and air, you will be sure to find bacteria converting more nitrogen, and the more they convert, the larger will be your crops.

Our soils contain from 3,000 to 6,000 pounds of phosphoric acid per acre, but not more than 300 to 350 pounds of that are in an available condition. With regard to potash, the same thing is true—there are from 5,000 to 8,000 pounds in every soil, and yet there is not more than 75 to 300 pounds of that immediately soluable condition. The chief object of our cultivation is to convert these low-priced, valueless materials, from an agricultural standpoint, into milk or beef or other farm product, because plant food in the soil is not worth anything to you or to me unless we can convert it into vegetable material, and then into milk or beef or bacon, or something else of that nature.

You can very readily see what cropping year after year means. There is no such a thing as an exhaustible soil, but you can easily exhaust that which is immediately available. You can exhaust this available material, and allow the land to remain idle, and while it remains idle it will all the time be reaccumulating the material it lost, and in a few years you will be able to commence the devastating work again. You could do it by summer fallow, but the day for that has gone by. This question of soil fertility is not known in the West; every section of the Dominion has its own problem, and the problem for Eastern Canada is increasing the fertility, while the question of the Northwest is conserving the moisture. Summer fallow is a wasteful process. Everything is useful when used in moderation. An excessive development of humus will tend toward the destruction of these materials which they feed upon, the humus, which we know is necessary in our soil.

Question—Is nitrogen more easily made soluable than phosphoric acid or potash?

Prof. Shutt—It depends upon the class of soil. Nitrogen and humus are very closely associated.

Question—The tendency in summer fallow would be to grow too much stuff?

Prof. Shutt—I did not intend to point that out; but if you will refer to our reports, you will find that summer fallow not only conserves the moisture, but tends to liberate the nitrogen in the form of nitrates. Of course, if the crops were there, they would take up the nitrogen which is otherwise lost.

Question—There is a great deal of hay land idle in sod; is it going behind?

Prof. Shutt—It is accumulating humus, it is increasing rather than deteriorating; but it is rather an expensive way.

I want to say a word with regard to the association of nitrogen and humus. We can get phosphoric acid from the rocks, and nitrogen is closely intimated with humus. Our experiments show that the lands which produce the largest crops are the richest in humus; of course, I am excluding muck soils, but I am including arable soils. That is what characterizes the rich loam of the West; it has a large proportion of vegetable matter.

The next point is this—Wherever we find the land rich in humus, we find a land rich in nitrogen, and *vice versa.* Humus is in the soil for the nitrogen, and a soil which is poor in humus is not only a poor soil because it is not in a proper mechanical condition, but because it is deficient in this essential element of plant food. In advocating growing clover, we not only have in view the replenshing of the organic matter in the soil, which may serve as food for the becteria, but also enriching of that soil with nitrogen. Water is just as essential in the soil as nitrogen, potash, or phosphoric acid. We do not realize the value of water because we do not have to pay for it; if we were living in a district where we had to irrigate, we would speedily recognize its value. What makes the difference in crops one year and another? Is it because there is more plant food one year than another? Yes; it is the rainfall of one season over another, or the lack of rainfall that does it. Plants take their food from the soil in a dilute solution. There are only 25 to 50 pounds of available food in a whole acre, and when we know that the roots do not occupy a very large proportion of that acre, we can easily see that in order that they may take up that food, they must take up very large quantities of water; and for every pound of dry matter which is stored up in the plant, there are about 350 pounds of water used. In the growing of corn, how much water passes through that corn plant? Over 1,000 tons. How important this matter is — in a dry year we do not get large crops simply because they do not get sufficient water. Water is the vehicle whereby the plant obtains its food. If you take a jar of sand and pour water into it, if there is a hole at the bottom, you can draw off a considerable amount of water—the water leaches through it. If we have a jar containing sand, clay, and humus, we could pour the same quantity of water into it and we would not find any leaking out at the bottom; in other words, we have increased the absorbing power of the soil, we have made a reservoir. Shallow ploughing is not recommended. In all questions we want to think of our soil as a reservoir, and the deeper we get the humus in, the more water we can store up for the use of our crops. Try the experiment for yourself, and prove to your own satisfaction that the soil that can withstand the largest amount of dry weather, other things being equal, is the soil which holds the largest amount of water per acre. If we want our soil to hold water, we must put humus into it. There is another way we can overcome the results of an unfavorable season, and that is by turning the key in the door; when we have humus in the soil we aim to keep it there and not allow it to escape by evaporation, and it is with this end in view that we cultivate and harrow. If the soil is left standing idle, it is as if a number of little tubes were in it, and the water escaping through them. When we cultivate, these tubes are stopped up, and the moisture remains. I have seen a plot of land left standing alone in a dry season to contain from three to five per cent. of moisture, and on another portion of that same plot, kept carefully cultivated during the same dry season, the percentage of moisture was as high as eleven per cent. Do not lose sight of the function of the humus—the converting of food into an available form, and also its absortive capacity, which keeps the soil moist and warm. But is is a natural conservator of nitrogen. As a rule we find the soils decline in their crop-producing power as they decline in their nitrogen contents, and you can easily see the reason why. There may be soil that would be benefited by phosphoric acid, potash, and lime, but, for the most part, if we get the humus, and at the same time the supply of nitrogen, as we can with clover, we make that soil suitable from a mechanical stand for the growth of crops. Once we get humus there, we get material for the bacteria to feed on, and they will get to work on the inorganic material, and furnish the necessary plant food.

Question—We have some heavy dews during the dry season, will cultivated land absorb that dew?

Prof. Shutt—I cannot hold out any hope; not to any very great extent.

Question—In the mornings I have noticed that a piece of land just cultivated appears to be a good deal more moist?

Prof. Shutt—That would be on the immediate surface. The object of cultivation is to keep down what is down. Dew is due to a difference in the temperature. The more heated an atmosphere is the more moisture it can hold; the colder it is the less moisture it will hold. There is a point of saturation for every degree on the thermometer.

Commercial fertilizers will place a certain amount of plant food in an available form. We can attain the same object by keeping cattle, the former the more expensive way. Commercial fertilizers will supply a certain amount of plant food according to what it contains. I am speaking of the guaranteed fertilizers that have been examined by the department at Ottawa. The proper way to use commercial fertilizers is in conjunction with barnyard manure. Barnyard manure supplies the organic matter that is going to form humus, and improve the soil mechanically. Commercial fertilizers do not contain humus; barnyard manure is full of germs, and fermentation is simply the growth of these germs.

Question—What do you consider the better—manure one year old, or manure fresh from the barn?

Prof. Shutt—My general advice is to get it on the ground as quickly as possible. I do not believe nine out of ten of you can care for that manure as the soil can.

Question—Is there more bacteria in the fresh than rotted manure, ton per ton?

Prof. Shutt—No; I do not think I could say there are more. The difference between rotted manure and fresh is chiefly this—In rotted manure the plant food is more immediately available in a more soluble condition; it is more concentrated; of course, you have lost a considerable amount of organic matter. Unless you are taking extreme precautions, the loss is going to be more than the benefit.

Question—Are you responsible for the statement that manure loses sixty per cent. of its value by decaying?

Prof. Shutt—How are we going to define that word value? I said sixty per cent. of its weight, which is a very different thing.

Question—Ton per ton, green manure is equal to rotted manure?

Prof. Shutt—I did not make that statement. In experiments we have conducted we have obtained as large returns from fields fertilized with rotted manure, as we have from those fertilized with fresh. There are various degrees of rotted manure. You must make it plain whether the manure is thoroughly rotted, or just started. In a sense, the fresh manure, of which you speak, is fresh, and in a sense it is not. Manure made in the winter, and put out in the spring, is not fresh. This does not affect what I have said one bit; but you must not confuse manure taken straight out of the stable and put onto the field with manure that has been kept three or four months, and call that fresh manure. If manure is placed in small heaps, and the frost gets through it, the plant food will keep till next spring. There are no experiments to prove this, but we expect to conduct some soon. We have started large heaps containing twelve or thirteen tons, and I expect there will be a greater loss from these than the small heaps.

Question—In your small heaps, there will be something go off into the air?

Prof. Shutt—No; there is no loss from the drying out, except what you might call succulency. I took fresh manure and rotted, and weighed and analized it carefully and exposed it to the air; of course, it dried right up, and people thought the virtue had gone out of it. No; it had dried up, and it was not so easily incorporated with the soil, and consequently it could not give up its plant food so readily, but the plant food was not lost.

Question—Is manure under cover more valuable?

Prof. Shutt—Oh, yes. There is nothing more wasteful than to allow the water to run through manure. A great loss may be made in a few months by fermentation and leaching.

Question—How many soil bacteria would be in a square inch of land near the surface?

Prof. Shutt—A great many thousand; in some soils perhaps fifty to seventy thousand in a square inch.

Question—If cattle were put in box stalls, and the stalls not cleaned out for three or four months, would you call that green manure?

Prof. Shutt—If it was quite moist, and no ammonia in the atmosphere, I would call it green manure.

We want to increase the humus, and at the same time the nitrogen in our soils. It is very desirable to keep cattle on our farms, for there is no method of accomplishing this more successfully and economically than by using green manure. There are certain classes of plant food taken from the soil, and nitrogen is one. With all our crops, nitrogen must come in by the roots with one exception. Every crop of wheat, barley, oats, turnips, mangels, hay, or buckwheat diminishes to a certain extent the nitrogen in the soil. I have the figures here showing the amount for each crop for one year and up to ten years. There is one class, or family of plants, that contrary to the rule does not diminish the quantity of nitrogen in the soil, and that family is called the Leguminosæ; to this family belongs the clover, peas, beans, and some others. They have the property of leaving the soil richer in nitrogen than it was before they were grown. This discovery is certainly one of the most important ones of the century in agriculture. It was well known for centuries that clover would benefit the land, but why, it was not understood. Air, as you know, consists of oxygen and nitrogen—four-fifths nitrogen—a very large quantity of it to the square inch over the world's surface, and yet that is unavailable for plant food just as it is unavailable for animal life. It is there to dilute the oxygen. It took a great many years of research and experiment to find out why clover left the soil richer than it found it. When they examined the roots of the clover plant, they found nodules. A microscopic examination showed joints on these nodules, all swarming with bacteria or germs, and, without going into details, they proved beyond question that it was through the agency of these germs which were on the nodules the clover was able to take nitrogen from the air. It was not taken up by the leaves from the atmosphere, it was from the air between the spaces in the soil; and in some way we do not clearly understand, the plant is able to take this air from the soil for its own use. This process is a mutual benefit both to the plant and the soil. Before the clover can do this work, the germs have to be there, and the soil has to be moist and aerated. There is no use having waterlogged soil, because the germs require air, and there you see one reason for failure in growing clover, for if the soil is full of water, it cannot at the same time be full of air. The germs are drowned, and the clover cannot get a start. The clover plant, apart from the bacteria, is absolutely helpless in this matter, the appropriation of atmospheric nitrogen, when assisted, can store up a very large amount of nitrogen. We have been experimenting along this line ever since 1894, and I have some charts here today which show the results. We examined soil before and after the growing of clover, that was one experiment. We have analized clover plants, and estimated the amount of humus and nitrogen in it, that was a second set of experiments. Since the proof of the pudding is in the eating thereof, we have taken it from the standpoint of a practical farmer, and have determined the yield of crops obtained after growing clover as against soil of a similiar character. These are the three ways in which the subject has been broached.

Prof. Shutt then described his experiments with clover, illustrating his remarks with charts.

Question—How much does fodder corn take from the soil?

Prof. Shutt—Fifteen tons to the acre. It will take at least sixty-five pounds of nitrogen, thirty-three of phosphoric acid, and a little over one hundred pounds of potash. Oats take forty-six pounds of nitrogen, sixteen of phosphoric acid, and thirty-five of potash. A leafy crop makes large demands upon the potash. Turnips take about fifty-five pounds of nitrogen, thirty of phosphoric acid, and one hundred and fourteen of potash, that is when the leaves are left on the ground. The leaves contain material of much value as manure, and when they are left on the ground, one-half of the fertilizing value is returned.

Question—Which has the most value for feed, turnips or corn?

Prof. Shutt—We can get more dry matter per acre with corn.

ORCHARDING IN NEW BRUNSWICK AND RESULTS.

The next speaker was Mr. J. C. Gilman, Kingsclear, York Co., who read a paper, as follows:

Among the experience that I remember best may be found some things that the fruit grower ought not to do. To know how to avoid mistakes is sometimes very useful in more things than fruit growing.

SITUATION.

In selecting the land for an orchard, it is often the case that a part or the whole of it needs drainage, and the idea will occur to set the trees first and drain afterward. Don't do it. If ever young trees need soil in ideal condition it is the first year of their orchard life, when they need all the aid we can give them to overcome the strain made by their transfer from the nursery to the orchard. With soil in good condition when set, followed by proper cultivation the first of the season, the check to a healthy young tree will be reduced to the lowest point. Whereas, if planted in wet ground, with all of its attendant ills, we have conditions just the reverse of what they should be to ensure success; while the question of drainage, being so easily disposed of in the first place, will be very apt to wait till we get time; in too many cases this time never comes.

VARIETIES.

If you are in doubt about what varieties to plant, don't be guided in your choice by a stranger who has trees to sell.

BUYING STOCK.

When you are ready to buy your trees, don't forget that there are reliable nurserymen who sell direct to the planter on reasonable terms, while railway and express companies will give you prompt service at fair rates. But if you really wish the help of an agent in the transaction, you can find plenty of them willing to aid you for about 40 per cent.

DISTANCE TO PLANT.

With regard to distance apart, or how many trees to the acre, is a question that will bear some careful thought on your part; different varieties need varying distances. The advocates of close planting may tell you how easy it is to cut them out when they begin to crowd each other; this may sound all right, but I will venture this assertion, that there is not one man in ten who has the nerve to cut down his trees before harm has already been done to those left standing. If we could see that part of the orchard that is under ground as plainly as that which is above, there would be less close planting done.

INSECTS.

When your trees are set, don't think your share of the work is done, and that the future has nothing in store for you but apples and dollars; your period of active service has just commenced. All of the insect enemies of the orchard that can get there are going to be on time, and the result of which gets the best of it will depend largely on your energy and perserverance.

SPRAYING.

One of the necessities in fruit growing is a good spray pump. To get a small, cheap one is a mistake. Good work requires force, and whether your motive power is furnished by hand or some other source, the pressure should be strong and steady enough to give that misty spray, which will economize material and give best results. If spraying done nothing else but subdue insect pests, this alone would recommend it to all.

PRUNING.

Pruning is another question, to be thought of in time, and it will pay you to give it your best thought, and then pay a dollar or two for the best thought of some one else, in the form of some standard authority.

In pruning a tree we need to keep a double purpose in view, with regard to its future work; first, to start or set enough specimens for a crop, and then to support that crop in such a way that air and sunshine may do their perfect work. Many hesitate to plant fruit trees because they have so long to wait, but when properly cared for, this objection largely disappears. When the new growth of your young trees first becomes active, be on the alert to encourage all necessary growth by supplying at the start that which is needed, throwing all the vigor of your tree in the proper direction, that there may not be any waste of substance in producing useless leaf or wood to cut away later on. This anticipative method of pruning will be found very exacting on the time of the one that does the work, but where properly done is much the better way to hasten the growth and development of the tree.

A judicious pruning of the tree will also be found one of the best ways to thin the fruit on such varieties as overload.

STORAGE.

The man who has been successful enough to get a fine, young orchard in bearing, will make quite a mistake if he fails to provide good storage room for the crops of fruit he may reasonably expect to harvest. Don't depend on barn floors, wood sheds, or other outbuildings. They are all useful, but their purpose is not to hold fruit. Cellars under dwellings are sometimes all right, but many are utterly unfit for the purpose, especially where furnaces are in use.

Some of the ills of the fruit-grower, who is not provided with a suitable place to house his crop, are:

First—Extra work and inconvenience by using space needed for other purposes.

Second—Injury to the fruit from sudden and repeated change of temperature, with too high a temperature for the average.

Third—Necessity of quick sales, thereby going into a glutted fall market and putting himself at the mercy of the buyer.

Fourth—Sudden cold snaps and rats.

Some of the advantages of special storage are:

First—An average annual saving of labor equal to 8 per cent. of the cost of the building.

Second—A saving in shrinkage and quality.

Third—Being in a better position to hold on for better prices, or hurry the crop away for the same purpose, while the lessened amount of worry and care attendant on the work, are well worth considering.

In this review of what appears to be the more important points of my experience, you will notice there are some things I would try to avoid, while there are others that call for redoubled effort as the work goes on. A continual war on the enemies of the orchard must be kept up, with a determination to win every time. This is the only safe way.

RESULTS.

With regard to results obtained from my orchard, I may say that commencing without any knowledge of fruit growing, my mistakes and losses have not been more than might reasonably be expected, while on the other hand I have found the work to my liking. The profits, although not such as would excite a man, have been so encouraging that if I were starting again tomorrow my first step would be to look for a site to plant more apple trees.

MR. CLARKE, OF MAUGERVILLE.

Mr. J .W. Clarke, of Maugerville, was the next speaker, and said that it was his first appearance on a public platform. He thought apple raising was in its infancy in this Province, and he was satisfied with the work that he had put into it. One thing of which the shippers should be careful is to put their fruit up well. On shipping to Glasgow, Scotland, during the past year, he had made $2.25 per barrel on shipping New Brunswickers and Wealthies. The apples were shipped in barrels secured from Taylor & White, St. John, and within 30 days from the date of shipment he had got his returns. He was perfectly satisfied with the results, and had shipped them in the same shape that he sent them into the home market. Trees should be planted from 25 to 30 feet apart each way. He believed in planting trees that bore hard fruit. He would like to see the farmers form a company for the manufacture of barrels and boxes to be used for shipping.

Mr. Blair, of Nappan Farm, followed with an address on "Insects, Pests, and Fungous Growths, and How to Combat Them." He believed it was very important that in growing potatoes that the Bordeaux Mixture with Paris Green be used; it was better than the Paris Green alone, or Bug-death alone.

REPORT OF THE COMMITTEE APPOINTED TO INQUIRE INTO THE CAUSE OF THE DECREASING INTEREST IN THE ASSOCIATION.

We find there are several reasons why the meetings are falling off. First—The withdrawal of the grant formerly given to this meeting through the Dairy Association. Second—The carrying to the farmer, through the medium of the "Farmers' Institute," the information required by him. Third—The increasing of the agricultural functions, such as Maritime Winter Fair and Exhibition, and such shows. Fourth—The increased number of agricultural periodicals available to the farmer.

The committee then asked for an extension of time until the next session, in which to advise means to remedy the state of affairs.

Moved and seconded that this committee be allowed to stand for another year, when they will again report. Carried.

Moved and seconded that the Agricultural Society of Chatham be thanked for the presentation of badges.

Moved, seconded and carried that Mr. Hubbard be tendered a vote of thanks for his services as corresponding secretary. Mr. Hubbard very suitably replied, expressing regret that the meeting was smaller than usual.

Moved and seconded that Senator Perley be made an honorary member of this Association.

Meeting adjourned.

A. G. DICKSON, Rec. Sec'y.

LIST OF MEMBERS OF THE FARMERS' AND DAIRYMEN'S ASSOCIATION FOR 1905.

Alward, C. F., Havelock, Kings Co.
Buchanan, J., Sussex, Kings Co.
Barker, Walter, Kingsclear, York Co.
Boyd, Rev. Hunter, Waweig, Charlotte Co.
Briggs, S., Lindsay, Carleton Co.
Blair, W. S., Nappan, N. S.
Boyle, Wm., Golden Grove, St. John Co.
Babbitt, Geo., Fredericton.
Barker House, Fredericton.
Barry, J. H., Fredericton.
Bliss, Lewis J., Fredericton.
Bell, James A., Fredericton.
Colpitts, Albert, Pt. De Bute, Westmorland Co.
Curry, David, Tobique River, Victoria Co.
Clark, George N., Rexton, Kent Co.
Cameron, Wm., Fredericton.
Clements, F. D. L., Fredericton.
Crockett, Wm., Fredericton.
Chestnut, R., Fredericton.
Dickson, A. G., Chatham.
Dow, N. S., Woodstock.
Daigle, L. C., Moncton
Edwards, J. A., Fredericton.
Everett, W. E., Fredericton.
Everett, Fred., Fredericton.
Edgecombe, F. B., Fredericton.
Farris, Hon. L. P., White's Cove, Queens Co.
Fawcett, B. M., Sackville.
Fisher, Geo. E., Chatham.
Ferguson, John, Lower Queensbury, York Co.
Fleming, W. C., Fredericton.
Fickler, M., Fredericton.
Fleming, J. H., Fredericton.
Griffiths, D. J., Stanley, York Co.
Good, James, Jacksonville, Carleton Co.
Gilman, J. C., Fredericton.
Garland, F. A., Fredericton.
Hoyt, Jas. E., Hampton, Kings Co.
Hubbard, W. W., St. John.
Hughes, J. A., Petitcodiac.
Hanning, James, Fredericton.
Hillyard, F. S., Fredericton.
Hodge, James, Fredericton.
Inman, C. R., Kilburn, Victoria Co.
Inch, J. R., Fredericton.
Johnston, Alex. F., Lower Loch Lomond, St. John Co.
Jewett, A. H., Fredericton.
Kitchen, Willard, Fredericton.
Lenox, R. L., Rexton.
Lemont, Wm., Fredericton.
Munroe, D. F., Mid. Simonds, Carleton Co.
Mitchell, Harvey, Sussex.
McMurray, J. F., Fredericton.
McKenzie, P. D., Fredericton.
Mack, R. T., Fredericton.
McAlpine, A. E., Cambridge, Queens Co.
McFarlane, S. F., Fredericton.
Northrup, A. D., Kingston, Kings Co.
Patchell, R. R., St. John.
Peters, Thos. A., Fredericton.
Parlee, W. K. C., Fredericton.
Page, Granville, Centreville, Carleton Co.
Queen Hotel, Fredericton.
Russell, F. N., Chatham.
Reid, J. B., Glassville, Carleton Co.
Randolph, A. F., Fredericton.

Stephenson, Isaac, Upper Sheffield.
Scott, Arch., Glassville.
Sheldrick,R. R., Kingston, Kings Co.
Shaw, Aaron, Mid. Simonds, Carleton Co.
Strong, Alex., Lindsay, Carleton Co.
Stephenson, G. F., Golden Grove, St. John Co.
Thomas, A. D., Fredericton.
Tompkins, W. S., Meductic.
Trueman, Howard, Pt. De Bute, Westmorland Co.
Thomas, Harry, Lindsay.
Tilley, J. F., Woodstock.
Tweeddale, J. F., Arthurette.
Tibbitts, R. W. L., Fredericton.
Taylor, Wm., Fredericton.
Tweeddale, G. A., Fredericton.
Thompson, Senator, Fredericton.
Violet, B. R., St. Leonards.
Wilmot, Henry, Oromocto.
Wetmore, A. R., Kingston.
Webb, W. J., Centreville.
Wallace, R. B., Fredericton.
Wilson, "Judge," Fredericton.
Winslow, T. B., Fredericton.
Wilmot, A. R., Fredericton.
Weddall, W., Fredericton.

THE NEW BRUNSWICK
Fruit Growers' Association.

ORGANIZATION MEETING.

At a meeting of New Brunswick fruit growers, assembled in the Board room of the Winter Fair building, Amherst, N S., December 14, 1904, it was, on motion of W. D. Albright, seconded by W. W. Hubbard, and approved by Hon. L. P. Farris, Commissioner for Agriculture,

Resolved—That a Fruit Growers' Association be organized for the Province of New Brunswick. Carried unanimously.

Provisional officers were then elected, consisting of a president, vice-president, secretary-treasurer, and a director for each county.

The officers chosen were:—President, J. C. Gilman, Fredericton; Vice-president, George McAlpine, Lower Gagetown; Secretary-Treasurer, W. D. Albright, Sussex.

DIRECTORS.

John I. Steeves, Hillsborough, Albert Co.; C. F. Rogers, Woodstock, Carleton Co.; Rev. Hunter Boyd, Waweig, Charlotte Co.; T. Edwin Carter, Bathurst, Gloucester Co.; O. W. Wetmore, Clifton, Kings Co.; James Barnes, Buctouche, Kent Co.; Beleni Violet, St. Leonards, Madawaska Co.; Wm. McIntosh, St. John, St. John Co.; Donald Innes, Tobique, Victoria Co.; William B. Fawcett, Upper Sackville, Westmorland Co.; H. F. Grosvenor, Meductic, York Co.; Alfred E. McAlpine, Lower Cambridge, Queens Co.; Archibald Snowball, Chatham, Northumberland Co.; John Barbarrie, Dalhousie, Restigouche Co.; Isaac W. Stephenson, Upper Sheffield, Sunbury Co.

A committee was appointed to propose a constitution, to be submitted to a meeting of the Association at Fredericton, January 27th, 1905.

The meeting then adjourned.

FIRST REGULAR MEETING, JANUARY 27, 1905.

The first regular meeting of The New Brunswick Fruit Growers' Association was held in Church Hall, Fredericton, on the above date, President J. C. Gilman in the chair.

After a few introductory remarks, he called upon Mr. T. A. Peters, Deputy Commissioner for Agriculture, who explained the objects, method of planting, and first season's experience with the Illustration Orchards in New Brunswick.

ADDRESS BY A. McNEILL.

Music was then furnished by Messrs. Edney and Wilkes, of Fredericton, after which A. McNeill, Chief of the Fruit Division, Ottawa, was called upon and responded with an address, in which he commended the idea of forming a Fruit Growers' Association for the Province, and spoke encouragingly of our prospects in horticulture. He presented statistics showing the number of fruit trees in several Provinces of the Dominion. New Brunswick, he said, has 445,000 bearing apple trees; Kings County, N. S., alone has 758,000; Ontario has one apple tree for every three acres of land; Nova Scotia has one for every five acres, and New Brunswick has one for every ten acres; showing that there is thus ample room for development.

REASONS FOR ENCOURAGING ORCHARDING.

Orchards enable our lands to sustain an increased population. Horticulture is thus a subject of vital interest to every class of the community. It would be far more desirable to increase our population by 10,000 orchardists than by 20,000 factory hands. Orcharding is more healthful. It is better for the individual to be an orchardist than a factory man. The former has a thousand and one things to do and think about, which develops him in every way. The factory man is usually a machine for ten hours a day.

I was at a meeting not long ago where there happened to be a number of legal gentlemen, and one of them remarked that the people were dependent upon the farmers for food, clothing, and nearly everything. I followed him, and pointed out further that the farmers supplied another thing for which they were never given credit—they supplied the brains of the country.

The lumberman robs the country, the fruit grower enriches it. The miner's work leaves the nation annually poorer in resources; the orchardist produces and leaves the country practically as rich as before. Orcharding pays. For the area used, for the capital invested, there is no money made more easily than that made out of orcharding. I would not advise any farmer here to go into orcharding exclusively, but rather as a branch of farming.

Average Profits of Orcharding.

A good bearing orchard should usually give one hundred barrels per acre. These are worth, one year with another, about $1.00 per barrel, or $100.00 per acre. The cost of working an orchard is about $15.00 to $30.00 per acre. This leaves an average net return of $70.00 profit, supposing you were hiring everything done.

I congratulate you upon having started this Association, and assure you the department will do all possible to assist. It is just possible we may be able to do something for the especial benefit of members of the Association. I believe it our duty to do something to encourage this banding together, to induce this united effort, for upon this organization will largely depend the development of the fruit industry of the Province.

W. S. Blair.

Following the chief, Mr. Blair spoke briefly, touching the matter of varieties. He had been repeatedly asked what varieties he would recommend. He suggested a list of six—Wealthy, Wolfe River, McIntosh Red, Baxter, Golden Russet, Ben Davis.

Mr. Peters—Isn't it your experience that the tree of the Golden Russet is a poor bearer?

A.—Well, it bears fairly well, and the fruit is of good quality.

Q.—Doesn't it wilt?

A.—Yes; because being russetted it does not hold moisture well. But put it in a proper store house and it will keep well. Mr. McNeill could, perhaps, advise you better on this matter of varieties.

Mr. McNeill—These varieties would suit me first-class, except the Russet. I do not know that I would recommend it for a commercial orchard.

Don't be discouraged if you have in your neighborhood a small surplus you cannot sell well. Grow enough to attract export buyers. Grow a few varieties, two or three, and Mr. Blair has recommended the right ones.

The minutes of the preceding meeting were then read by the secretary, and approved.

He then read the provisional constitution drawn up by the committee appointed to prepare it. This, on motion of Mr. T. A. Peters, was adopted, subject to a slight change at the discretion of the executive.

A nominating committee was then appointed by the president.

Re Nursery Stock.

The secretary read some correspondence from two nursery firms to whom he had written asking for terms on which they would supply nursery stock to the Association for its members. Both firms are well known and reliable, and they offered net discounts amounting to 30 per cent. in one case, and 40 per cent. in the other, subject to certain conditions.

It is not proposed to take up this work this year; but the securing of nursery stock is undoubtedly a line which might be advantageously followed up, thus eliminating the chances of securing inferior and wrongly named stock, a danger which at the present time militates more seriously than any other against the extension of horticulture in the Province. It is also confidently believed that the commission would leave a slight balance to accrue to the funds of the Association, while at the same time giving a slight discount in price to the members.

The secretary then read a telegram he had sent to the Minister of Agriculture, Ottawa, on hearing the rumor of the proposed change in the divisions at Ottawa. A resolution endorsing this action was passed, viz.:

Resolved—That this convention of The New Brunswick Fruit Growers' Association hereby endorses the action of the Secretary in protesting, by telegram, to the Honorable the Minister of Agriculture against the proposed subordination of the fruit to the dairy division in the Dominion Department of Agriculture, and that we respectfully record our opinion that the fruit interests should receive increasing attention and assistance as respecting an industry of greater unexploited possibilities in this Province and the Dominion at large, than any other, and that a copy of this resolution be forwarded by the secretary to Hon. Sydney Fisher.

THE REPORT OF THE NOMINATING COMMITTEE.

The nominating committee, after suggesting a list of executive officers, found themselves unable to secure from the membership list a director for each county. The list of provisional directors was advised, excepting in case of those who had not paid their membership fees, substitutes to these to be appointed by the executive. The committee's recommendation was adopted, and the officers, so far as chosen at the date of this report, stand:—President, J. C. Gilman, Fredericton; Vice-president, Geo. McAlpine, Lower Gagetown; Secretary, W. D. Albright, Sussex; Treasurer, H. Wilmot, Oromocto.

DIRECTORS.

J. F. Tilley, Woodstock, Carleton Co.; Robert Richardson, Bartlett's Mills, Charlotte Co.; John F. Frost, Hampton, Kings Co.; Isaac W. Stephenson, Upper Sheffield, Sunbury Co.; Wm. McIntosh, St. John, St. John Co.; Wm. B. Fawcett, Upper Sackville, Westmorland Co.; J. W. Clarke, Maugerville, York Co.

Treasurer's Report.

FINANCIAL TRANSACTIONS OF THE NEW BRUNSWICK FRUIT GROWERS' ASSOCIATION.

1905.	*Receipts.*		
Jan. 23.	Membership fees received to date,		$19 00
Jan. 27.	Membership fees received since Jan. 23rd,		11 00
			$30 00
1905.	*Disbursements.*		
Jan. 19.	Letter file,	$0 25	
Jan. 19.	Minute book,	82	
Jan. 27.	Correspondence account—R. D. Robinson, Publisher, Ltd., 17 letters,	85	
Jan. 27.	Advertising account — Fred'ton Gleaner,	3 00	
			4 92
	Balance on hand,		$25 08

Additional membership fees have been received since the balancing of this statement, bringing the total receipts up to date of writing, February 11, 1905, to $34.00.

Meeting adjourned.

Conventions and Meetings.

It is proposed to hold an annual convention next winter, at a date to be decided upon by the executive; and through the summer a number of orchard meetings are to be held at different points, where practical demonstrations will be given in spraying, cultivation, pruning, grafting, etc.

Literature.

Arrangements have been made with representatives of the Fruit Division, Ottawa, and other organizations, whereby the members of The New Brunswick Fruit Growers' Association will receive a good deal of useful literature, including a bulletin of apple culture, one on the export apple trade, one on plum culture, and the Experimental Farm report, in addition to the reports of the Ontario, Prince Edward Island and Nova Scotia Fruit Growers' Associations, free of charge, and without the trouble of applying.

Membership List N. B. F. G. A. for 1905.

W. D. Albright, Sussex, N. B.
C. F. Alward, Havelock, N. B.
L. C. Daigle, Moncton, N. B.
Bliss M. Fawcett, Upper Sackville, N. B.
Wm. B. Fawcett, Upper Sackville, N. B.
J. C. Gilman, Fredericton, N. B.
Barton Gandy, St. John, N. B.
J. H. Jamieson, Sussex, N. B.
Harvey Mitchell, Sussex, N. B.
William McIntosh, St. John, N. B.
J. D. O'Connell, Sussex, N. B.
T. S. Petrie, St. John, N. B.
Thomas A. Peters, Fredericton, N. B.
M. H. Parlee, Sussex, N. B.
G. R. Sangster, Moncton, N. B.
W. S. Tompkins, Meductic, N. B.
J. F. Tilley, Woodstock, N. B.
F. V. Wedderburn, St. John, N. B.
I. T. Hetherington, Jenkins P. O., N. B.
J. Hunter Boyd, Waweig, N. B.
J. W. Clarke, Maugerville, N. B.
Hon. L. P. Farris, White's Cove, N. B.
John Ferguson, Lower Queensbury, N.B.
John F. Frost, Hampton, N. B.
Wm. B. Gilman, Fredericton, N. B.
S. B. Hatheway, Berry Hill, Fredericton, N. B.
W W. Hubbard, St. John, N. B.
J. E. Holder, Lower Cambridge, N. B.
Alfred E. McAlpine, Lower Cambridge, N. B.
R. R. Patchell, St. John, N. B.
Robert Richardson, Bartlett's Mills, N.B.
Isaac W. Stephenson, Up. Sheffield, N.B.
A. D. Thomas, Fredericton, N. B.
H. Wilmot, Oromocto, N. B.

CONSTITUTION AND BYE-LAWS

OF

The New Brunswick Fruit Growers' Association

Section I.—Name.

This Society shall be known as "The New Brunswick Fruit Growers' Association."

Section II.—Object.

The object of this Association shall be the promotion of fruit growing in all its branches.

Section III.—Officers.

The Officers of the Association shall be:—A President, a Vice-president, a Director for each County (so far as practicable), a Secretary, a Treasurer, two Auditors, and an Executive Committee, consisting of the President, Vice-president, Secretary, and Treasurer.

Section IV.—Meetings.

The Association shall hold at least one annual meeting in each year. The annual meeting for the election and inauguration of officers shall take place at such time as the Executive Committee shall decide.

Section V.—Membership.

Any person may become a member of this Association for one year by paying the Treasurer the sum of One Dollar, such membership to expire on the Thirty-First day of December following, except as may be provided by bye-laws.

Section VI.—Amendments.

Any Amendments to the foregoing Constitution shall be made only at an annual meeting, by a vote of two-thirds of the members present and voting, notice of the proposed change having been given at a previous regular meeting.

BYE-LAWS.

1.—PRESIDENT.

The President shall preside at all meetings of the Association, and perform such duties as pertain to the office; and in his absence his official duties shall devolve upon (1st) the Vice-president, or (2nd) the Director for the County in which the meeting may be held.

2.—DIRECTORS.

The duties of Directors shall be to bring the objects and interests of the Association to the notice of the people in their several Counties; to urge the claims, and endeavor to increase the membership of the Association. They shall make an annual report upon the fruit crop in their respective Counties, and make such recommendations and suggestions as may seem best calculated to advance the objects of the Association. All Directors shall be considered as corresponding members during their term of office.

3.—SECRETARY.

The duties of the Secretary shall be to attend all meetings, and keep a record of the doings of the Association, employing a reporter when necessary; to conduct the correspondence, and, with the assistance of the Publication Committee, to prepare and publish, annually, the transactions and reports of the Association.

4.—TREASURER.

The Treasurer shall receive all moneys due or receivable by the Association, and have charge of all the funds of the Association, depositing them in a Chartered Bank; and shall pay all bills owing on account of the Association, but shall incur no expenditure of a large or doubtful character, except with the sanction of the Executive Board.

5.—AUDITORS.

There shall be elected two Auditors, who shall examine and report upon the books, accounts, and financial statement of the Treasurer. They shall be entitled to demand all necessary books, papers, and vouchers three day's previous to the annual meeting.

6.—Executive Board.

The President, Vice-president, Secretary, and Treasurer shall constitute an Executive Board, whose duties shall be to carefully guard the interests of the Association; to provide for its necessities as they may arise; to fill, when thought advisable, vacancies occurring between elections; to select the time and place, and make arrangements for meetings, exhibitions, etc.; to determine the salaries of its officers, and peform such other duties as are required by the Constitution and By-laws.

7.—Membership Privileges.

Each member in full standing shall be entitlted to the privilege of voting, of eligibility to office, and a copy of all the publications of the Association.

8.—Election of Officers.

Officers shall be nominated at each annual meeting by a nominating committee appointed by the President—the committee's report to be considered and voted upon by the qualified members present.

9.—Fiscal Year.

The fiscal year shall be the calendar year.

10.—Alterations.

[illegible] foregoing By-laws may be altered, amended, or suspended by a majority vote, notice having been duly given at the preceding annual meeting.

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1905

DEPARTMENT OF AGRICULTURE.

FREDERICTON, N. B., December, 1905.

To His Honor the Honorable Jabez Bunting Snowball, D.C.L.,
L L.D., Lieutenant-Governor of the Province of New Brunswick.

May It Please Your Honor:—

I have the honor to submit the Report of the Department for Agriculture in New Brunswick for the year 1905.

I have the honor to be, Sir,

Your obedient servant,

L. P. FARRIS,
Commissioner for Agriculture.

DEPARTMENT OF AGRICULTURE, NEW BRUNSWICK.

HON. L. P. FARRIS, Commissioner for Agriculture.

THOMAS A. PETERS, Deputy Commissioner.

HARVEY MITCHELL, L. C. DAIGLE,	Dairy Superintendents.

JOS. P. MCPEAKE, Clerk.

REPORT

OF THE

Commissioner for Agriculture,

NEW BRUNSWICK,

1905.

To The Honorable Jabez Bunting Snowball, D.C.L., L.L.D., Lieutenant-Governor, etc.

May It Please Your Honor:—

In submitting my Annual Report on Agriculture for the year 1905, it gives me pleasure to state that the Province has enjoyed a fairly prosperous year.

The Winter of 1904-5 was especially severe for this Province, the thermometer registering, in many cases, as low as 35 degrees below zero. This, with the heavy snow storms and high winds, causing heavy drifts, interfered seriously with the railroads and general traffic.

The low temperature also caused serious injury to the more tender varieties of fruit trees.

Spring opened early, with weather such as to give the farmers an excellent chance for cultivating and preparing the ground for the seed. Good growing weather prevailed during the early part of the Summer, giving vegetation a fine start; but, unfortunately, later on, drouth prevailed very generally over the Province.

WEATHER REPORT.

By the courtesy of Chancellor Harrison, of the University of New Brunswick, who has compiled these reports for the Department for several years past, we are enabled to publish the following valuable records of the weather conditions which prevailed in the Province during the year 1905.

The following table shows the hours of bright sunshine at Fredericton during the year 1905, also the hours of possible sunshine, and the average for the last 24 years:

1905. MONTHS	Hours of bright sunshine at Fredericton.	Hours of possible sunshine.	Average hours of sunshine for the last 24 years at Fredericton.
January	138	285.0	112
February	128	302.2	123
March	208	369.9	151
April	207	406.5	183
May	236	463.2	200
June	179	470.4	216
July	268	475.4	236
August	254	437.2	222
September	151	376.4	183
October	209	340.1	150
November	108	284.9	93
December	97	271.1	93

The following table shows the highest and lowest temperatures at Fredericton for the year 1905, together with the average temperature for the last 32 years, the precipitation for each month, in inches, of rain and melted snow, and the average precipitation for the last 31 years. Ten inches of snow, measured just after falling, was taken as equivalent to one inch of rain. (The sign — before a number means that the temperature is below zero).

1905 MONTHS	Highest Temperature of each month	Lowest Temperature of each month	Mean Temperature of each month	Average Mean Temperature of each month for 32 years	Precipitation for each month in inches	Average Precipitation for the last 32 years at Fredericton
January	44	—34	10	12	6.6	4.1
February	42	—21	12	16	2.8	3.6
March	58	—19	25	27	1.1	4.0
April	66	20	41	38	1.2	2.5
May	77	24	50	51	2.0	3.7
June	89	31	57	61	2.4	3.5
July	88	46	67	66	1.8	3.6
August	89	35	63	64	1.6	3.6
September	79	29	56	56	5.3	3.4
October	73	16	44	44	0.9	3.8
November	57	— 3	33	32	3.8	4.1
December	55	—21	22	19	3.5	3.4

The following table is compiled from temperatures recorded at Chatham, Grand Manan, Point Lepreaux, St. John, Dalhousie, St. Stephen, Moncton and Sussex.

MONTHS	Chatham		Grand Manan		Point Lepreaux		St. John		Dalhousie		St. Stephen		Moncton		Sussex	
	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
1904																
December	34	—21	47	— 2	37	— 1	46	— 7	40	—11	40	—27	45	—14	45	—16
1905																
January	42	—35	50	— 6	40	— 8	48	—11	40	—30	47	—39	45	—24	44	—35
February	38	—20	45	— 4	38	2	35	— 3	32	—13	39	—26	42	—19	39	—25
March	62	—17	54	4	44	9	51	1	54	—12	57	—18	53	—18	52	—25
April	72	21	62	22	52	26	64	25	60	19	73	20	67	21	66	24
May	81	29	69	34	57	33	69	30	76	34	77	26	77	21	75	21
June	92	35	76	36	67	41	76	40	88	40	83	30	87	28	83	30
July	92	47	83	47	67	48	80	50	92	35	....	....	87	42	86	40
August	91	44	80	43	63	50	75	46	88	43	....	....	88	26	86	31
September	83	34	72	37	62	37	68	37	79	36	....	....	78	29	78	27
October	81	19					68	26	68	20	....	....	70	15	76	15
November	54	2					52	12	44	11	58	— 2	57	— 4	56	—13

HAY.

Grass got a good start in the Spring, and when meadows were in good condition, were soon clothed with a sufficient cover to hold the moisure and maintain growth in spite of the continued dry weather.

On the uplands, this crop, which is one of the most important grown, was a full average. On old, worn-out meadows, the cut was, as usual, light.

On the intervale lands along the St. John River, on account of the lack of the usual overflow and deposit of sediment, the cut was hardly up to the season of 1904.

As a result of the teaching at Farmers' Institute meetings, the growing of clover is gradually becoming much more general, showing good results in the obtaining of better crops on the same land, when a clover sod is turned down.

Some complaints have been made that the dyked marshes in Westmorland and Albert Counties, which have not been overflowed for a long time, are not cutting as much hay as in former years. It would appear that the different owners of these lands, which are protected by a common dyke, would have to agree to allow the lands to flood for one season, in order to bring them back to their original fertility.

PASTURES.

To maintain pastures at their best, a good average rainfall is required. The season of 1905 was very short in this respect, and by the first of July pastures generally had become very dry, and did not recover during the season. And as the great bulk of our farmers provide no supplementary food for such an emergency, the result was disasterous to the dairy industry.

Up-to-date farmers (and I am pleased to state the number is gradually increasing) always arrange for green food, such as peas and oats, vetches, etc., for just such an emergency as occured this year, and where such supplementary food had been provided, a fair supply of milk was obtained. On the other hand, indifferent and careless farmers, who had provided no such supplementary food, found their supply of milk getting smaller from day to day, until, after a time, their cows were practically dry.

WHEAT.

In almost all sections of the Province where this crop is grown, it turned out exceedingly well. In sections within reach of a modern mill the acreage is on the increase and the farmers are well pleased with the results; but, in sections where no mills have been established, very little is grown.

OATS.

This crop is more generally grown, and is, perhaps, the most valuable of any of the grains. During June and July a good deal of complaint was heard that, on account of the dry weather, this crop was likely to be very short; but at harvest time it had improved very much, and, although at the present writing the returns have not been made up, it is supposed that a fair average crop has been obtained. Harvest time was very fine, and the grain was housed in good order, leaving the straw in fine condition for feeding purposes, and the grain plump and hard.

BARLEY.

This grain is very little grown; but, when sown, gave good results.

BUCKWHEAT.

Heavy frosts on 14th August last very materially damaged this crop in a good many sections of the Province, which will, no doubt, cause a good deal of hardship. Great use is made of buckwheat, both for family purposes and also for the feeding of swine, cattle and poultry, and a shortage of it means, especially, a reduction in the supply of pork, which the farmer might have produced had the average crop been harvested. It would seem, from the uncertainty that has followed this crop for the last few years, that it would be good policy to substitute barley instead, at least for a part of the feed supply.

ROOTS.

Potatoes were excellent in quality, and, generally speaking, were a fair crop. In some sections complaints were made of a small yield, and in a few localities considerable rot was found at digging time, notably in parts of Kings, Queens and Sunbury Counties. It is surprising that while with very little cost and labor the potato can be practically saved from rot by thoroughly spraying with Bordeau Mixture, more of it is not done. It would seem to be poor economy to plant, cultivate and care for a field of potatoes all the season and then lose a large percentage of them for the want of a little attention in the way of protection. The vines have to be sprayed with some sort of poison to protect from the bugs, and it would be very little more trouble to add the Bordeau Mixture at the same time. This Department will be very glad to lend any assistance at any time by way of giving formula for mixing, kind of spray pump, etc. Prices for potatoes have been good, averaging about $1.25 per barrel.

Turnips.—During the first part of the season turnips made a very slow growth, but after the rains came, in September and October, they recovered, and in most sections turned out an excellent crop.

Quite a number of cases were reported that much damage was done by the cut worm; some had to sow the second and third time. A remedy for this trouble is given by Dr. James Fletcher, Entomologist and Botanist of the Dominion Experimental Farms, as follows:

"Poisoned Bran Mash.—The most remarkable effective remedy against cut worms is the poisoned bran mash, which has lately come into such wide use. This is made by mixing half a pound of Paris green with fifty pounds of slightly moistened bran. In making this, it is best first to dampen some of the bran slightly with water containing a little sugar. After mixing thoroughly, add the Paris green by dusting it on the surface and stirring all the time. We have found that when Paris green is added to perfectly dry bran, owing to its weight, it will sink at once to the bottom when stirred, in the same way that it does in water. Half a pound of Paris green is enough to poison fifty pounds of bran, although double this amount may be used. If the mixture is too wet, more dry bran should be stirred in until the mixture will crumble easily and run through the fingers without adhering.

"When required for garden use, all that is necessary is to sprinkle a little of the poisoned mixture by hand around such plants as are liable to attack. When crops are planted in drills or in rows, a convenient way is to make the mixture rather dry, and then distribute it by means of a Planet Jr., or other wheel seeder. In field practice, among such close growing crops as standing grain, which are sometimes injured by the Red-backed Cutworm, the poisoned bran remedy is also serviceable. The mixture can be distributed by means of a paddle or shingle, and can be thrown easily to a distance of twenty feet. When distributed in this way, there is much less danger of chickens and birds picking it up than if it is placed in lumps.

" The question of danger from the use of this poisoned bait is one which must be considered. It is frequently inquired about by correspondents, and some instances of the poisoning of poultry, where it has been used, seemed to be justly attributable to their having eaten some of it. As a rule, there is little danger from this cause. The quantity used is so small that it is not noticed by poultry; and then, in gardens, poultry do so much harm to plants that they should never be admitted at the time of year when cutworms occur injuriously and only at special times of the year when there are no crops to injure. If, however, there should be a bad infestation by cutworms and there is no means of barring out or driving away the chickens, the owner of the crops must decide whether he will lose his crop or take special means of protecting his chickens. The experience of a great many people who have used this remedy without taking any special precautions, is that injury to domestic animals is extremely rare; and, although I have been on the watch for any trouble of this sort for many years, I do not know of a single instance when poultry have been poisoned, without doubt, by eating poisoned bran put out for cutworms. However, there will be many occasions when plants in gardens may be protected by putting out the poisoned bran in small heaps, and then covering these up with a piece of shingle or some other covering, so that the material cannot be got at by stray chickens and other poultry:

" It has also been asked whether there is any danger of plants absorbing Paris green from this mixture when placed near their roots. In reply to this, it is only necessary to point out that Paris green is practically insoluble and therefore cannot be absorbed by the plant."

POULTRY.

The high prices which have prevailed the last few years have created a very great interest in the production of poultry. In the

Fredericton market turkeys reached twenty-five cents per pound, and crate-fattened chickens sold for fifteen to twenty cents per pound.

Mr. G. R. Cotterell, of Milton, Ontario, a specialist on the rearing, fattening and marketing of poultry, was engaged by the Department, and during the months of October and November, gave addresses at thirty Farmers' Institute meetings in the Province. In nearly every case letters of appreciation as to the value of his addresses have been received, and, as a result, I have no doubt much larger flocks will be kept.

A great many farmers have an idea that the raising of poultry is too small a matter for them to give much attention to; and, yet, for the capital invested, there is perhaps nothing about the farm which gives as good returns.

Prof. Jas. W. Robertson stated, at a meeting of the Seed Growers' Association, held at Ottawa in June last, that in the Province of Nova Scotia the hens gave as much income as the total fruit crop. If this is so (and there is no doubt he would not make the statement without full information), then the farmers should wake up to the possibility of the poultry industry.

ILLUSTRATION ORCHARDS.

In the month of May, 1905, ten orchards were set, viz.:
One in Gloucester County.
Two in Madawaska County.
Two in Northumberland County.
One in Queen's County.
One in St. John County.
Two in Victoria County.
One in York County.

and, also, a few trees put out on the grounds of the Consolidated School, at Kingston, King's County.

Nearly all the trees lived and made a good growth during the season.

The varieties of apples set were:—Fameuse, McIntosh Red, Wealthy, Duchess, Stark, Arctic, Baxter, Wolfe River, Milwaukee and Ben Davis. Varieties of plums set were:— Yellow Egg, Imperial Gage, Lombard and Hawkeye.

During the coming season the Ben Davis will be dropped, as during the last two severe Winters that variety suffered more from Winter-killing than any other variety planted.

The directions given this year as to care were to keep a strip four feet wide on each side of the line of trees (or eight feet in all), cultivated once a week from the time of setting the trees, up to the tenth of July, then to seed down to clover. The Department furnished enough Crimson clover seed to seed the strip. This clover, being a quick-growing variety, in most cases made a growth of from six to nine inches before frost came, making a good cover for the Winter.

Before the ground froze, the trees were wrapped either with building paper or wood veneer, from the grounds to the first limbs, and banked with earth three to six inches high, care being taken to get the earth some distance from the roots of the tree, so as not to leave a hole for water to settle in.

Fruit trees newly set, as well as those which had been bearing for years, suffered severely during the last two Winters; plums especially being practically all killed in the colder sections. In the eight orchards set in the Spring of 1904, a good deal of damage was done from Winter and Spring killing.

The following table shows Apple trees set in the spring of 1904 and the number of each variety killed last winter.

LOCATION	Fameuse	Died	McIntosh Red	Died	Wolfe River	Died	Baxter	Died	Arctic	Died	R. I. Greening	Died	Grimes' Golden	Died	Milwaukee	Died	Stark	Died	Ben Davis	Died	Total Set	Total Died
Florenceville	10	9	10	7	10	....	10	3	10	8	10	8	10	10	10	2	10	6	10	9	100	62
Waweig.	10	....	10	....	10	....	10	....	10	....	10	....	10	....	10	....	10	1	10	....	100	1
Buctouche.	10	2	10	2	10	4	10	....	10	....	10	....	10	8	10	2	10	8	10	....	100	26
Sussex	5	....	5	1	5	3	5	2	5	3	5	3	5	3	5	2	5	....	5	1	50	18
Jubilee	4	....	4	1	5	....	5	....	10	7	10	10	10	10	10	....	4	4	10	4	72	36
New Jerusalem	5	....	5	....	5	....	5	....	5	....	5	....	5	....	5	....	5	....	5	1	50	1
Upper Sheffield	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	50	20	....	....	50	20

The dead trees will be replaced during the spring of 1906.

CROP REPORT.

Since the year 1898, statistics of the six leading crops of grain and roots grown in the Province have been collected and published in the Report by the Department.

The mode of collecting these reports is, perhaps, the most detailed and reliable of any method followed by any of the Provinces of Canada, entailing a large amount of labor on the Department.

A circular, with headings for acres and bushels of each crop to be reported upon, is mailed to the Secretary of School Trustees in each School District in the Province (1587 in all), requestiog the Secretary to collect the crop statistics, in full, for his School District, showing the number of acres under each crop, and the number of bushels of each crop raised on each farm in the District, if possible, forwarding the same to the Department as soon as the information can be obtained.

I am pleased to say that in a large number of cases these gentlemen have complied with our request, and have done their work well, for which we wish to sincerely thank them. In return, a copy of the report is mailed to each correspondent.

For tables of crop reports, see following pages:

WHEAT.

The following table shows the acreage and yield by Counties and for the Province : —

COUNTY.	1905.			1904.			1903.			1902.			1901.			Average for last 8 yrs.
	Acres.	Bush.	Bush per Acre	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	
Albert	377	7,887	20.9	395	7,499	19.0	408	9,472	23.2	421	8,529	20.2	391	7,539	19.2	....
Carleton	2,833	64,173	22.6	2,785	59,143	21.2	2,984	67,881	22.7	2,951	62,945	21.3	3,117	64,216	20.6	....
Charlotte	62	404	22.6	78	1,551	20.0	77	1,737	22.5	110	2,294	20.8	129	2,668	20.6	....
Gloucester	2,715	52,851	19.2	2,947	50,933	17.2	3,079	62,907	20.4	3,616	71,776	19.8	4,825	80,965	16.7	....
Kent	4,794	83,631	17.	4,805	72,574	15.1	4,903	98,472	20.0	4 974	97,520	19.6	5,977	104,551	17.4	....
Kings	491	10,137	20.6	516	10,330	20.0	534	12,136	22.7	557	11,943	21.4	650	12,781	19.6	....
Madawaska	818	14,629	17.8	782	13,291	17.0	1,070	21,989	20.5	1,236	22,950	18.5	1,482	24,849	16.7	....
Northumberland.	2,235	44,202	19.7	2,149	38,098	17.7	2,234	47,737	21.3	2,243	43,932	19.5	2,413	46,610	19.3	....
Queens	36	742	20.6	33	621	19.0	53	1,103	20.8	56	1,092	19.5	89	1,741	19.5	....
Restigouche	5 32	11,020	20.7	471	9,174	19.4	530	11,113	20.9	591	12,222	20.6	654	13,233	20.2	....
St John	32	632	19.7	18	350	19.4	19	421	22.1	3	58	19.3	3	52	19.0	....
Sunbury	73	1,385	19.	62	1,169	18.8	74	1,625	21.9	73	1,503	20.5	112	2,566	22.9	....
Victoria.........	1,183	23,662	20.	1,062	20,985	19.7	1,070	23,444	21.9	1,070	22,048	20.6	1,064	20,642	19.4	....
Westmorland ...	3,670	73,452	20.	3,414	57,212	16.7	3,670	78,109	21.2	3,809	76,927	20.1	4,215	78,484	18.6	....
York	803	16.090	20.	893	16,615	18.5	839	18,099	21.5	892	17,911	20.0	889	17,989	20.4	....
The Province...	20,684	404 897	19.6	20,410	359,545	17.6	21,544	456.245	21.1	22.602	453,640	20.0	26,010	478.886	18.4	18.3

OATS.

The following table shows the acreage and yield by Counties and for the Province :—

COUNTY.	1905.			1904.			1903.			1902.			1901.			Average for last 8 yrs.
	Acres.	Bushels.	Bush. per acre	Acres	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	
Albert	4,358	121,928	28.	4,158	126.715	30.4	4,014	132,551	33.0	3,783	113,558	30.0	3,831	102,514	26.7	....
Carleton	43,867	1,378,023	31.1	42,507	1,327,090	31.2	43,716	1,502,713	34.3	42,982	1,428,325	33.2	41,839	1,340,035	32.0	....
Charlotte.....	4,084	134,058	32.8	3,965	127,188	32.0	4,195	150,196	35.8	3,866	132,992	34.4	4,179	126,518	30.2	....
Gloucester....	12,674	372,777	29.4	11,833	343,421	29.0	11,739	359,103	30.5	10,501	310,376	29.5	12,431	282,346	22.7	....
Kent	16,572	412,129	24.8	16,330	367,677	22.5	16,525	493,407	29.8	15,069	425,279	28.2	18 987	387,050	20.3	....
Kings........	15,794	467,892	29.6	15,707	463,044	29.4	15,326	501,129	32.6	14,513	457,667	31.5	15,147	393,733	25.9	....
Madawaska ..	12,502	339,576	27.1	10,935	287,436	26.2	10,278	304,983	29.6	10,010	266,953	26.6	12,079	276.344	22.8	....
Northum'land.	10,655	309,954	29.	10,137	293,304	28.9	10,031	323.061	32.2	9,726	289,677	29.7	12.053	279,484	23.1	....
Queens.......	7,351	202,599	27.5	7,003	193,009	27.5	7,241	215,181	29.7	7,278	202,110	27.7	7,592	191,652	25.2	....
Restigouche ..	5,903	173.225	29.3	5,161	147,921	28.6	5,229	169,828	32.4	5,547	168,396	30.3	5,906	159,801	27 0	....
St. John	2,508	77,110	30 7	2,416	73,492	30.4	2.295	81,460	35.4	2,252	79,796	35.4	2.159	71,220	32.9	...
Sunbury	3,009	91,605	30.4	2,859	86,372	30.2	2,700	89.601	33.1	2,665	86,832	32.5	2,909	76,291	26.2	....
Victoria	11,813	356,814	30.2	11,199	341,402	27.8	10,713	369,556	34.4	10.615	341,329	32.1	10.677	313,876	29.3	....
Westmorland .	15,991	442,766	27.6	14,639	406,482	27.7	13,741	452,317	32.9	13.493	402,525	29 8	14 592	373,848	25.6	....
York	20,065	606,062	30.2	19,225	568,709	29.5	19,166	646,521	33.7	19.613	607.535	30.9	19,733	570,280	28.8	....
The Province	187,146	5,486,528	29.3	178,074	5,153,262	28 9	176,909	5,791,607	32.7	171,913	5.313.349	30 8	184,114	4,944.992	26.8	29 1

BARLEY.

The following table shows the acreage and yield by Counties and for the Province :—

COUNTY	1905.			1904			1903.			1902.			1901.			Average for last 8 yrs.
	Acres.	Bushels.	Bush. per Acre	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per Acre	Acres.	Bushels	Bush. per Acre.	
Albert..........	112	2,696	24.	132	2,877	21.7	139	4,082	29.3	129	3,352	26.0	109	2,541	23.3	....
Carleton.........	321	9,065	28.	301	7,862	26.1	310	9,158	29.5	372	10.718	28.9	365	9,505	26.0	....
Charlotte........	160	4,251	26.5	183	4,964	27.1	275	7,109	29.3	249	6,848	27.5	281	6,976	24.8	...
Gloucester.	286	7,072	24.7	277	6,428	23.2	303	8,558	28.2	320	8,376	26.1	390	8,094	20.7	....
Kent...........	237	5,008	21.1	256	4,668	18.2	275	6,627	24.0	289	6,163	21.3	306	5,985	19.5	....
Kings..........	245	5,521	22.5	262	5,809	22.1	271	6,981	25.7	307	7,900	25.7	259	6,405	24.7	....
Madawaska......	363	7,852	21.6	267	5,466	20.4	237	5,141	21.6	279	6,186	22.1	278	5,187	18.6	....
Northumberland,.	92	2,205	23.9	70	1,527	21.8	60	1,342	22.3	57	1,277	22.4	68	1,395	20.5	....
Queens..........	46	1,164	25.3	42	998	23.7	41	1,089	26.5	58	1,361	23.4	107	2,325	21.7	....
Restigouche	142	3,311	23.3	111	2,646	23.8	116	3,022	26.0	118	2,825	23.9	173	4,290	24.7	....
St. John.........	4	88	22.	3	64	21.3	16	387	24.1	20	417	21.0	29	620	21.3	....
Sunbury.........	136	3.287	21.1	133	3,064	23.0	124	3,049	24.5	157	4,130	26.3	146	3,225	22.7	....
Victoria.........	148	3,286	22.2	118	2,948	24.7	89	2,276	25.5	85	2,052	24.1	94	2,057	21.8	....
Westmorland	1,454	33,717	23.1	1,319	30,930	22.2	1,560	37,940	24.3	1,446	36,210	25.0	1,415	30,936	21.8	....
York......	358	8,286	23.1	361	8,521	23.8	330	8,358	25.3	349	8,886	25.4	373	9.899	26.3	....
The Province	4,104	96,809	23.5	3,906	88,772	22.7	4,113	105,117	25.1	4,235	106,701	25.1	4,396	99,540	22.6	23.1

BUCKWHEAT.

The following table shows the acreage and yield by Counties and for the Province :—

COUNTY	1905.			1904.			1903.			1902.			1901.			Average for last 8 yrs.
	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	
Albert	2,483	41,983	17.7	2,669	53,975	20.2	2,491	55,345	22 2	2,529	55,294	21.8	2,525	53,189	21.0	....
Carleton	10.121	203,165	20.	10,552	229,459	21.7	10,640	251,962	23.6	10,751	267,597	24.8	11,617	268,375	23.1	....
Charlotte	610	14,039	23.	682	15,677	22.9	653	16 804	25.7	622	16,483	26.5	645	14,901	23 1	....
Gloucester	857	17,045	19.8	877	17,271	19.6	896	20,743	23.1	912	21,147	23.1	1,217	22,975	18.8	....
Kent	5,134	95,714	18.6	5,395	98,210	18.2	5,834	127,868	21.9	6,076	135,923	22.3	7,030	137,697	19.5	....
Kings	9,967	179,885	18.	10,231	207,950	20.3	10,288	238,705	23.2	10,096	246,137	24.3	11,176	229,741	20.5	....
Madawaska	5,989	113,279	18.9	5,787	110,569	19.0	5 683	118,865	20.9	6,251	133,302	21.3	7,346	142,991	19.4	....
Northumberland .	995	19,449	19.5	776	15,293	19.7	768	17,639	22.9	755	18,311	24.2	1,202	24,473	20.3	....
Queens	5,620	106,675	18.9	5,624	115,648	20.5	5,279	119.777	22.6	5,523	130,414	23.6	6,556	124.547	18.9	....
Restigouche.......	720	13.292	18.4	558	11,880	21.2	603	13,782	22.8	647	15,975	24 6	744	16,311	21.9	....
St- John.........	508	10,254	20.1	494	11,007	22.2	462	11,892	25.7	386	10,294	26.6	321	7,391	23.0	....
Sunbury	1,572	30,246	19.2	1,567	33,526	21.3	1,447	35,548	24.5	1 505	37,674	25.0	1,710	35,900	20.9	....
Victoria	3,252	70,320	21.6	3,341	76,218	22.8	3,381	83,498	24.6	3,417	87,553	25.6	3,780	89,264	23.6	....
Westmorland	5,979	104,381	17.4	6,291	125,196	19.9	6,279	147,567	23.5	6.332	144,456	22.8	6,874	135,018	19.6	....
York	6,758	137,510	20.3	6,730	140,171	20.8	6,791	164,734	24.2	7.220	181,171	25.0	7,371	176,704	23.9	...
The Province...	60,565	1,157,237	19.1	61.574	1.262,050	20.4	61 495	1,424,728	23.1	63,022	1,501,731	23.8	70,114	1,479.477	21.1	21.3

POTATOES.

The following table shows the acreage and yield by Counties and for the Province:

COUNTY.	1905.			1904.			1903.			1902.			1901.			Average for last 8 years.
	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush per acre	Acres.	Bushels.	Bush. per acre.	Acres.	Bushels.	Bush. per acre	
Albert	1,020	149,017	146.	979	160,855	164.3	930	139,101	149.5	946	124,225	131.3	894	96,617	108.0	.....
Carleton	4,027	641,919	159.4	3,309	574,303	173.5	3,297	452,280	137.4	3,329	336,802	101.1	3,751	417,230	111.2	.....
Charlotte	1,320	198,479	150.3	1,318	211,369	160.3	1,257	176,026	140.0	1 282	152,044	118.5	1,333	145,015	108.7	.....
Gloucester	4,541	672,743	148.	4,364	654,630	152.3	4,312	567,081	131.5	4,525	537,505	118.3	4,814	479,169	99.5	.....
Kent	5,064	698,925	138.	4,861	692,372	142.4	4,911	654,990	133.8	5,028	604,587	120.2	5,392	582,614	108.0	.....
Kings	2,600	362,980	139.2	2,575	393,892	152.9	2,612	381,338	145.9	2,610	337,402	129.2	2,818	299,958	106.4	.....
Madawaska	1,363	180,594	132.4	1,261	161,985	128.4	1,057	147,471	139.5	1,218	127,833	104.9	1,480	139,158	94.0	.....
Northumberland	2,918	446,313	152.9	2,674	384,468	143.7	2,560	334,694	130.7	2,619	308,991	118.0	2,965	304,922	102.8	.....
Queens	1,831	248,135	135.5	1,797	245,946	136.8	1,728	229,985	133.0	1,802	196,460	109.0	1,917	186,051	97.0	.....
Restigouche	1,271	202,550	159.1	1,156	180,550	156.1	1,162	146,35[illegible]	125.9	1,181	129,120	109.3	1,165	143,105	122.8	....
St. John	1,008	138,620	137.5	942	129,351	137.3	978	129,800	132.7	1,051	128,521	122.2	1,023	102,900	100.5	.....
Sunbury	1,265	174,197	137.7	1,196	167,194	139.7	1,185	150,842	127.2	1,261	129,375	102.5	1,345	140,345	104.3	. .
Victoria	1,076	154,605	143.6	1,000	148,352	148.3	921	122,477	132.9	902	90,737	100.5	836	89,939	107.5	.....
Westmorland	4,762	797,680	167.5	4,748	796,066	167.6	4,798	667,246	139.0	4,827	623,765	129.2	4,848	599,651	123.6	....
York	3,190	451,975	141.6	3,060	478,931	156.5	2,806	387,217	137.9	2 954	329,272	111.4	2,946	350,804	119.0	....
The Province	37,256	5,518,732	148.1	35,240	5,380,264	152.6	34,514	4,686,906	135.7	35,535	4,156,638	116.9	37,527	4,077 478	108.6	125.7

TURNIPS.

The following table shows the acreage and yield by Counties and for the Province: -

COUNTY.	1905.			1904			1903.			1902.			1901.			Average for last 7 years.
	Acres.	Bushels.	Bush. per Acre.	Acres.	Bushels.	Bush. per. acre.	Acres.	Bushels.	Bush. per acre.	Acres	Bushels	Bush. per acre.	Acres.	Bushels.	Bush. per acre.	
Albert	184	75,632	411.	179	86,183	481.4	167	85,653	512.8	172	71,400	415.1	202	54,889	271.7	.....
Carleton	614	293.171	477.	586	289,405	493.8	666	342,281	513.9	703	354,374	504.0	845	302,947	370.3	.....
Charlotte	384	188,971	492.	378	188,845	499.5	367	189,438	516.1	427	192,091	449.8	621	219,089	352.8	.....
Gloucester	220	106,824	531.	208	104,015	500.0	205	100,213	488.8	317	107,212	333 2	473	65,314	138 0	.....
Kent	249	118,085	474.2	245	116,173	474.1	272	134.301	493.7	385	143,550	378.0	650	126.734	149.9	....
Kings	740	369,671	499.5	767	382.855	499.1	752	409,388	544.3	793	399.683	504.0	952	256.332	269.2	.....
Madawaska	48	22,197	462.4	43	20,415	474.7	44	21,892	497.5	47	22,848	486.0	122	19,433	159.2	.....
Northumberland	321	158,505	493.7	287	142,500	496.4	269	135,185	502.5	305	142.479	467 2	519	101 276	195.1	....
Queens	228	114,697	503.	206	102,998	499.9	198	99,571	502.8	202	104.612	512.0	307	79,474	258.8	.....
Restigouche	102	51,835	508.1	80	39,864	498.3	74	37.378	505.1	73	34.755	476.0	145	28,166	194.2	.....
St. John	290	146,480	505.1	247	133,943	542.2	236	140,050	593.4	268	160,470	598.0	432	95,000	219.9	.....
Sunbury	170	78,957	464.	151	76,362	505.7	142	71,774	505.4	130	70,105	539.2	231	61,378	265.7	.....
Victoria	139	68,165	490.3	133	65,788	494.6	127	65,478	515 5	148	78,194	528.3	205	52,662	256.8	.....
Westmorland	674	340,090	504.5	594	298.395	502.3	562	290,482	516.9	498	253,812	509.0	800	215,727	269.0	.....
York	940	512,121	544.8	920	462,764	503.0	920	472,072	513.1	888	487,123	548.6	1,129	421.519	373.3	.....
The Province	5,303	2,645,401	498.8	5,024	2,510,505	499.7	5,001	2.595,156	518.9	5,356	2,622.726	489.6	7,633	2,099,940	275.1	384.5

DAIRYING.

The dairy industry has suffered severely in consequence of the drouth, and general shortage in crops during the season of 1904, followed by a severe Winter, with the prices of fodder extremely high, and a drouth extending from the latter part of July, to the close of the present season.

The dairymen were obliged to reduce their herds, and, in many cases, cows did not go to pasture in condition to produce a large flow of milk during the Summer.

We feel that this industry is of the utmost importance to the farmers of this Province, and trust that the two past seasons will not discourage the dairymen, as there has been a marked improvement in the condition of the farms in sections where the farmers are extensively engaged in this industry; instead of the crops being sold off in a raw state, they are fed, and the fertility of the land is kept up.

Success in this industry lies along the line of proper selection and feeding of the herd. The experience of the past should impress, upon the minds of our dairymen and live stock men generally, the importance of providing supplementary food for their herds, such as peas and oats, vetches, etc.

The shortage in the output of dairy produce this season is to be regretted, as prices for both cheese and butter have ruled exceptionally high throughout the season, and in a number of sections where the make was short the patrons received more money than they did last season.

The diarymen having had more experience and becoming more familiar with the necessary care and attention so essential to the delivery of good, pure milk to the factories, and the cheese and butter makers having attained a more thorough knowledge of their business, through practical work in the factories, and instruction given at the Dairy School, and less time being required in connection with the establishment of new factories, the staff of Dairy Superintendents has been reduced, and the work is now divided between Messrs Harvey Mitchell and L. C. Daigle.

The Provincial Dairy School continues to do good work. It opened this year on February 28th, and closed on March 23rd. During this time a short course was given in cheese and butter making, repairing of dairy utensils, and the breeding and feeding of dairy cattle.

To show what can be accomplished by careful selection, breeding and feeding, we are pleased to publish the yearly record of a cow owned by one of our best dairymen in the Sussex district. This cow was entered for the advanced registry of the American Guernsey Cattle Club, which requires the owner of the animal to furnish monthly records of the quantity of milk given, and the percentage of butter fat it contained. The test was conducted by Dairy Superintendent Mitchell, with the following result:

NAME OF COW, MILLWOOD'S PERSEVERANCE 2nd, 12936

Age, 4 years Sept. 1st, 1905. Date of Freshening, Dec. 31st, 1904.

Month	Pounds of Milk	Per Cent. of Fat	Pounds of Fat
January	1,057.0	5.00	52.85
February	1,173.5	5.10	59.85
March	1,062.0	4.80	50.98
April	940.6	4.90	46.09
May	1,065.7	5.60	59.68
June	1,093.1	5.20	56.84
July	1,154.6	4.87	56.23
August	901.6	5.90	53.19
September	627.0	6.15	38.56
October	508.2	6.15	31.25
November	445.4	5.90	26.28
December	465.7	6.15	28.64
Totals	10,494.4	Average 5.34	560.44

In order to be eligible for the advanced registry, it was necessary that the cow produce during the year, 7741 lbs. of milk, and 298.2 lbs. of butter fat. She came up to the required standard, and has a balance to her credit of 2753.4 lbs. of milk, and 262.24 lbs. of butter fat.

PROVINCIAL DAIRY SCHOOL.

1906 SESSION.

Under the direction of
HON. L. P. FARRIS, Commissioner for Agriculture.

The instructors are all specialists in their different branches, and are the best practical men that can be obtained.

OPENING OF COURSES.

The Creamery course will begin on Tuesday, February 27th, and close March 9th, 1906.

The Cheese course will begin March 12th, and close March 23rd, 1906.

CREAMERY COURSE.

This course is intended especially for butter makers and their assistants, and will comprise practical instruction in cream separation, butter making, milk testing, and use of starters, factory records, and accounts; care and management of engines and boilers, also breeding, feeding, and management of dairy cattle.

Special attention will be given this season to instruction in making export saltless butter, and the operation of combined churns and butter workers, as well as the old style of churns and workers. The school is epuipped with the leading makes of cream separators, and the most improved style of churns, which will place it on a par with any up-to date school of its kind.

CHEESE COURSE.

All cheese makers and their assistants should take this course, which comprises theoretical and practical instruction in cheese making, milk testing, factory records, and accounts; care and management of boilers, factory machinery and utensils, together with the breeding, feeding and management of dairy cattle, and the manufacture of cheese boxes. Before entering either of these courses, students are advised to spend at least one session in a cheese factory or creamery, as we do not consider students who have had no practical experience previous to attending the school competent to manage either.

TEACHING.

The teaching will be free to all students from the Maritime Provinces.

CERTIFICATES AND DIPLOMAS.

Certificates of standing will be given to those who pass all prescribed written and practical examinations, and manages a creamery or cheese factory successfully for one season after taking the course.

THE NUMBER OF PUPILS.

The number of pupils for either course is limited to thirty.

GENERAL CONDITIONS OF ADMISSION.

For admission to the school the applicant must be of at least seventeen years of age, and have a common school education. All students will be required to have two suits of workroom uniforms, consisting of overalls, jackets, and caps of white duck, to be had in the town at a cost of from $1.50 to $2.00 per suit.

The application for admission to the school shall be made upon a blank form, a copy of which shall be sent on demand, in which the pupil will state how long he has been working either as maker or helper.

Applications should be sent in as soon as possible, addressed to the Superintendent of the Dairy School, Sussex.

LODGING AND BOARD.

The students will have in the school, study and working rooms at their service, but they must sleep and board outside at their own expense.

In the immediate neighborhood of the school, board can be had at from $2.50 to $4.00 per week.

COVERING BREAKAGE.

A deposit of $2.00 will be required of all students to cover possible breakage. This sum of $2.00, if not required for breakage, will be refunded at the end of the course.

L. P. FARRIS,
Commissioner for Agriculture.

Fredericton, N. B., January 1st, 1906.

REPORT OF DAIRY SUPERINTENDENT FOR DISTRICT NO. 1.

To The Honorable L. P. Farris,
Commissioner for Agriculture.

Sir:—I herewith submit my annual report as Dairy Superintendent for District No. 1, for the year 1905. My district includes the Counties of St. John, Kings, Queens, Sunbury, Charlotte, York and Carleton. In this section cheese was made in twenty-eight factories, butter in nine, and thirteen were operated as skimming stations.

There was a falling off in dairy produce this season, due to unfavorable conditions over which we have no control. The shortage in the crops of hay, grain and roots in 1904, the high price of fodder during the Winter, and the drouth of 1905, which was more severe than that of the previous season, caused a shortage in the milk supply tt the factories, especially in sections where there is not any provision made for soiling crops.

The prices of cheese and butter have been high during the whole season, and the dairymen have got good returns for the milk they produced.

NEW FACTORIES AND IMPROVEMENTS.

There have not been any new cheese factories in my district during this year, but two new creameries and three skimming stations have been opened. The Maritime Dairy Company opened a central creamery at Sussex. The cream from their outside stations can be manufactured here to much better advantage than at tny other point, as the butter can go direct from the churns to the cold storage rooms, of the Sussex Packing Co., which have been a great help to the dairymen during the season. The cream from the three new skimming stations at Norton, Belleisle Creek, and Springfield, is also shipped in by rail; cream is also received from points along the I. C. R. as far east as Nappan, N. S.

Mr. W. H. Bell, who had been operating a small dairy on Waterloo Street, St. John, for a number of years, opened an up-to-date creamery on King St., in April last, and has had a very successful season's business. Cream was furnished from sixty farmers along the line of the I. C. R. and C. P. R.; also from the St. John River section via steamers. He proposes doubling the capacity of his plant for next season, the prospects for business being such as to warrant him in doing so.

A number of the old factories have had a general overhauling, the buildings and surroundings being greatly improved. A number of others are in need of attention, and will, no doubt, receive it before another season, as the patrons and factory owners now fully realize that the factory and surroundings must be in good sanitary condition in order to turn out a good quality of cheese and butter.

AMONG THE FACTORIES.

During the early part of the season I attended a number of meetings of the patrons at different factories, and, in some cases, visited the farm of every patron, or any who were likely to become patrons. I also visited the factories, and offered suggestions for improvements in the buildings, equipment and surroundings that would tend to improve the season's output, and, when necessary, assisted in repairing the plants.

In the month of June I visited the factories in the St. John River District. In parts of this section, particularly in Carleton County, I found the high prices paid for hay and grain during the winter had its effect on the milk supply at the factories. A common expression among the farmers was "Dairying don't Pay," and, judging from the conditions as I found them in many cases, their experience would warrant them in making that statement. The cows are wintered in barns lighted by a window in each gable end, and fed on a ration consisting of a liberal supply of straw and, in some cases, a little hay that has been damaged and unfit for market, also all the ice water they can drink once a day. It is safe to say, under such conditions, the farmers always keep the cows, instead of the cows keeping the farmers.

In some of the factories a part of the patrons sell their milk at a stated price per hundred weight, others sell it at a stated price per pound of butterfat, while the balance have it manufactured by the pound. They cannot agree on a system of operating their factories, as is done in the Kings County section, of having the milk manufactured by the pound, the product sold by a competent salesman, whose duty it is to keep posted in regard to the markets, and divide the proceeds according to the percentage of butterfat.

I tested a great many samples of milk from the patrons and found a great variation in the percentage of butterfat, and I regret to say some were not due to natural causes. It is unfair that patrons who furnish good, pure milk to the factories, containing 3.8 per cent. and over of butterfat, should be obliged to take the same price per hundred pounds for it, as a few of his unscrupulous neighbours receive for milk which contains only 2 per cent. of butterfat. The sooner the old pooling system is abolished, the better it will be for all concerned.

There is a tendency on the part of some of the cheese makers to work for a high average and leave a little too much moisture in their curds to make a good keeping cheese; let quality come first, and quantity follow.

There were also a few lots made during the hot weather that showed too much acid, but, generally speaking, the quality of the season's output was good.

A large quantity of the cheese and butter from the Kings County section was exported to the West India markets, via St. John and Halifax, while that of the St. John River District went to Great Britain via Montreal. The local consumption for cheese is increasing rapidly; also the demand for fresh-made creamery butter.

THE PROVINCIAL DAIRY SCHOOL.

The school was in session from February 28th to March 10th, and a short course was given in both cheese and butter making.

There were thirteen students enrolled for the butter making course, from the following counties:—Kings 5, Charlotte 4, Westmorland 2, Victoria 1, York 1; and for the cheese making course the attendance, by counties, was as follows:—Kings 7, Queens 2, Charlotte 1, York 1, Victoria 1, and Westmorland 1.

The school equipment consists of Alpha de Laval, and Sharples Tubular Turbine Cream Separators, one each; two Success, combined churns and butter workers, one Facile Turbine Babcock Milktester and a number of Facile Agos and Ideal Hand Testers, also the necessary cream and milk vats for cheese making purposes.

A new curd mill was placed in the school by the M. F. Beach Co., of Winchester, Ontario. It has a plunger with the knives cutting both ways, and did satisfactory work.

The routine of work is as follows:—The students assemble in the class-room for roll call at eight a.m. The class is then divided into groups, and go to the Departments allotted to them for practical work in the operating of cream seperators, butter making, cheese making, milk testing, etc. A blank form is furnished each student to keep a record of his day's work, and, when properly filled out, is handed to the instructor in charge, who also keeps a daily record of the practical work done by the students in his Department. The practical work finished, all return to the class-room, where a lecture is given, followed by a general discussion, in which many valuable points in connection with the different branches of the work, are brought out.

Eight students took the examinations in the butter making course, and the same number in the cheese making course. The following marks were made on the different subjects:—

BUTTER MAKING COURSE.

NAMES	Butter Making		Cream Seperating		Milk Testing		Outside Lectures	Total Score	Average Per Cent
	Practical	Written	Practical	Written	Practical	Written			
Percentage	100	100	100	100	100	100	100	700	100
Edwin Robinson	90	90	85	90	95	96	91½	637½	91.0
George Little	92	69	80	76	85	93	84	579	82.7
Roscoe Jewett	75	65	70	88	75	98	85¾	556¾	79.5
Howard Greenlaw	84	45	50	58	65	65	53¾	420¾	60.1
Herbert Leach	84	61	60	38	65	32	59¼	399¼	57.0
Jonathan Hicks	70	43	40	55½	75	55	57	395½	56.5
Luke Murphy	90	30½	70	24	65	36	80	395½	56.5
Carl Nelson	75	15	85	21	75	16	16	303	43.2

CHEESE MAKING COURSE.

NAMES	Cheese Making		Milk Testing		Outside Lectures	Total Score	Average Per Cent
	Practical	Written	Practical	Written			
Percentage	100	100	100	100	100	500	100
Andrew C. Keith	85	75	85	90	96	431	86.2
George A. Little	90	57	85	78	89½	399½	79.9
W. T. Hamilton	80	55½	75	30	61	301½	63.0
Jonathan Hicks	80	56	75	55	48	314	62.8
Louis H. Hansen	85	43	75	56	52	311	62.2
Luke Murphy	40	21	65	66	71½	263½	52.7
Nelson Tait	60	42½	....	58	71½	232	46.4
Robert Lisson	75	20	65	13	44½	217½	43.5

I wish to thank all those who have so kindly assisted me in my work during the season, and trust that in 1906 the dairymen may have a more favorable season for the production of milk, with prices such as they received this year.

I have the honor to be, sir,

Your obedient servant,

HARVEY MITCHELL.

Sussex, December 30, 1905.

REPORT OF DAIRY SUPERINTENDENT FOR DISTRICT No. 2.

To The Honorable L. P. Farris,
Commissioner for Agriculture.

Fredericton, N. B.

Sir:—I herewith submit my Eighth Annual Report as Dairy Superintendent for District No. 2, which comprises the counties of Restigouche, Gloucester, Northumberland, Kent, Westmorland, Albert, Victoria and Madawaska.

While the proceeds from the sale of dairy products may be as large this year as last, yet it was not a successful season, if we consider the quantity manufactured. This is to be regretted, as it makes two such years in succession.

The cows went out in very poor condition, owing to the scarcity of feed and the severity of the Winter; in some sections cows remained in that condition until quite late in the season.

The spring was late and cold, and in many sections rain did not come until June, which meant poor pastures. Many farmers seemed to lose all interest in their cows, until it was seen that prices were going to remain very high, but at this advanced stage of the season it was too late to induce cows to give much milk.

It is to be hoped that next season may be more favorable, as another season like the two past would be a severe blow to the industry, especially in my district, where, in one section, so much lumbering is being done, and in the other where fishing is a foremost industry, and farmers can look to the sea for fertilizers.

NEW FACTORIES AND IMPROVEMENTS.

A skimming station was established at Baie Verte by the Maritime Dairy Co., of Sussex, and the farmers are well pleased with its management.

The Great Shemogue cheese factory, which was closed during the Summer of 1904, was leased last season by Mr. Walter Goodwin, of

Baie Verte, and, although a poor season, he made more cheese then had been made there for some years. The farmers are satisfied, and I look for good work there next year.

The creamery at Memramcook was remodelled; every piece of machinery was taken out and replaced by a new and modern plant. Meetings were held in every section of this large Parish, but only a few patronized the creamery. They have nothing but praise for the new management, yet the number of patrons remained small. The conditions, however, of a large majority of the farms are such as to be greatly benefited by dairying.

The managers are going to make another effort to interest the farmers next season, and I hope they will receive the encouragement they justly deserve.

The St. Leonard's creamery, under new management, made an increase of more than seven thousand pounds this year over last. The present proprietors are to build a skimming station in connection with their creamery early next spring.

At the Chambord and Ste. Anne creameries, old Alexandra cream separators were replaced by new machines, and other much needed improvements made.

At several cheese factories I had hoped some improvements would have been made, but things looked so discouraging for the owners last spring that nothing was done. With prospects of a better season, I hope that at the few factories where the sanitary conditions are poor, something will be done to place them on a level with the others.

INSPECTION.

As usual the earlier part of the season was taken up with the work of getting factories ready for the beginning of operations and holding farmer's meetings; I visited the factories as often as I could during the summer. There were very few complaints about the quality of the products, and in some cases no fault was found with a rather inferior grade.

At a few factories where milk had always been sent in good condition, I found a lot of bad milk being brought in dirty cans, and immediately visited the parties interested, but, in some cases, my visits did not have the good effects I desired.

Had not the season been remarkably cool, making it an easy matter to keep milk in good condition, and had the market conditions been different, the results obtained would have been very unsatisfactory; and, as we cannot expect the same conditions another season, I would advise these patrons, as well as those of all the factories, to take special care of the milk next season. Some farmers send bad milk to the factories, but they always expect first-class cheese and butter, which cannot be made from anything but choice raw material.

INSTITUTE MEETINGS.

During the months of August and September I accompanied Mr. A. T. Charron, of the Experimental Farm, at Ottawa, on a series of Institute meetings in seven counties of my district, and I am pleased to say that they have done much good. The average attendance at these meetings was one hundred and thirty-two.

Mr. Charron has done much towards reviving in the French districts the interest formerly taken in Institute meetings, which was in a large measure lost during the last few years, when English speakers were sent in the French districts. These men were all practical farmers and good speakers, and, unfortunate it was, they could not be understood by the majority of the French farmers.

Not only was interest in the meetings lost, but there existed everywhere a feeling that the people were being unjustly treated by the Department of Agriculture.

I wish to take this opportunity to say that the Department has always tried to secure French speakers for French districts, but such speakers were not available, and the Department had to send English speakers. They were fortunate in getting some who spoke French fluently, others spoke it with some difficulty, while others could not speak it at all, but blame should not have been attached to the Department of Agriculture, as has been the case, because it was a condition of affairs over which they had no control.

In future I hope that the Department will be successful in getting French speakers for French sections, and that the farmers will attend meetings in larger numbers.

To Institute work we owe the advancement in agriculture which has taken place during the last ten years, and today it is still the only way to reach the French farmer, who has not, like his English speaking cousins, agricultural and dairy literature at his disposal. Much has yet to be done, and soon, especially along the lines of better feeding and breeding of the dairy cow, if we wish to make dairying a profitable industry.

DAIRY SCHOOL WORK.

As in other years, I had charge of the butter making department, and, while last year's class was not as large as some of the other years, they were a class of good men, most of whom proved first-class workers.

The Superintendent intends making changes in the butter making department, which we think will be of advantage to those taking this course during the coming terms of the Dairy School, and I hope as many as possible will take advantage of it.

EXHIBITIONS.

I assisted Messrs. Mitchell and Tilley at the Fredericton Exhibition, and at the Amherst Winter Fair, at which latter place we conducted the dairy test. I also attended the Charlottetown Exhibition, where I judged the dairy products. This exhibit, as usual, by its quality and tasteful arrangement, was a feature of the Exhibition, and a credit to Prince Edward Island.

I take this opportunity to thank those who have assisted me during the past season, and made my work agreeable as well as more profitable.

I have the honor to be, sir,

Your obedient servant,

L. C. D'AIGLE.

CHEESE FACTORIES IN NEW BRUNSWICK, 1905.

NAME OF FACTORY	COUNTY	SECRETARY OR MANAGER	Number of Patrons	Lbs. of Milk Received	Lbs. of Cheese Made	Lbs. of Milk to one of Cheese	Price per lb. in cents	Time in Operation
Wakefield Centre........	Carleton.....	Henry Briggs......	12	81,301	7,365	11.03	10 50	June 19 to Sept. 8.
Bloomfield..............	"	Geo. H. Stokoe....	22	117,772	11,870	9.92	10 12	June 5 to August 30.
Glassville..............	"	John McIntosh.....	42	328 171	31,316	10.47	10.34	May 29 to Sept. 16.
Jacksonville...........	"	Jas. Good & Son...	20	160.197	15,646	10 23	10.75	June 12 to Sept. 22.
Bathurst and Beresford..	Gloucester....	John D. Frier	14	117,355	11.464	10 23	11.34	May 29 to Sept. 23.
Petit Roche	"	J. H Comeau......	26	112,256	11,505	9.75	11.00	June 26 to Sept. 26.
Weldford..............	Kent........	John Morton......	9	56,493	5,363	10.53	11.10	June 19 to Sept. 8.
Sussex..............	Kings........	S. C. McCulley.....	190	13,500	1,305	10 34	12 00	March 13 to March 23.
Corn Hill..............	"	James H. Brown...	50	1,084.562	105 488	10.28	10.50	April 3 to December 23.
Lower Ridge...........	"	Thos. G. Perry.....	23	418.407	39 634	10.55	10.77	May 1 to Nov. 3.
Penobsquis............	"	Albert Sear	36	1,123 270	117,238	9 58	10.60	April 6 to Nov. 6.
Mount Middleton.......	"	Geo. R. Hornbrook.	12	313.779	30,001	10.45	10.38	May 9 to October 13.
Mechanic Settlement....	"	Jas. Webster......	13	172,404	16,586	10 39	10.10	May 16 to October 6.
Clover Hill.............	"	R. Allen Cassidy...	45	521,006	51,590	10.09	10.78	May 1 to October 30.
Corn Hill Corner........	"	R. H Rouse......	29	656,671	63,027	10.41	10.60	April 24 to November 8.
Berwick...............	"	W. D. Fenwick...	30	433.026	43,709	9.90	10.87	April 17 to October 30.
Havelock..............	"	C. F. Alward.....	70	1,161,352	114,176	10 17	10.50	Nov. 1. 1904, to Oct. 30, 1905
Newtown	"	Richard Stockton..	24	419,618	41 316	10.15	10.50	May 15 to October 30.
Lissonville............	"	John D. Frier......	28	370,092	35,045	10.56	10.85	May 20 to November 18.
Hillsdale Corner.......	"	John D. Frier......	17	147.961	14 061	10.52	10.67	May 3 to August 31.
Upham...............	"	John D. Frier......	14	192,028	18,599	10 32	10 45	May 18 to October 2.
Carsonville............	"	John D. Frier......	16	238 997	24,746	9 64	10.76	May 22 to November 4.
Head of Millstream.....	"	John D. Frier......	32	399,522	39,373	10.14	10 70	May 22 to November 6.
St. Jacques............	Madawaska...	M. P. Babineau....	30	245 424	24,530	10.00	10 00	June 4 to October 21
Baker Lake............	"	Louis Bouchard....	25	183,705	19,878	9 24	10.50	May 23 to October 23.
St. Francis............	"	A. Pelletier.......	30	311,994	34 666	9.00	10.75	May 25 to October 30.
Rockway..............	"	Germain Toussaint..	32	243,924	24 392	10.00	10 00	June 4 to October 21.
Hampstead............	Queens......	N. W. Eveleigh...	14	365 520	36 590	10.00	10.50	May 29 to November 7.
Petersville & Hampstead	"	Wm. A. Machum..	27	147,057	14.566	10.09	10.17	June 5 to August 31.
Canaan...............	"	E. B Keith........	15	162.812	15.460	10 53	10 86	June 5 to October 6.
Salmonhurst..........	Victoria	A. Chris. Jensen...	49	644,651	60,552	10 64	10.50	May 15 to October 24.

CHEESE FACTORIES IN NEW BRUNSWICK—*Continued.*

NAME OF FACTORY	COUNTY	SECRETARY OR MANAGER	Number of Patrons	Lbs. of Milk Received	Lbs. of Cheese Made	Lbs. of Milk to one of Cheese	Price per lb. in cents	Time in Operation
Drummond.	"	S. C. Merritt	16	95,763	9,794	9 77	10.50	June 1 to September 28.
*Foley Brook.	"	Andre C. Jensen . .	26	231,120	23,112	10.00	10.50	May 15 to October 24.
Salisbury	Westmorland. .	Robt. T. McCready	30	414,620	41.341	10 02	10.75	May 1 to October 9.
Killam's Mills.	"	Harry F. Hughes. . .	45	547,700	53,500	10.23	11.00	May 1 to November 15.
Petitcodiac	"	Harry F. Hughes . .	70	607.800	58 881	10.32	11.00	Nov. 1, 1904, to Oct. 30, 1905
Lewis Mountain	"	J. Keohan.	27	375.029	36,120	10.38	10.75	May 1 to October 17.
Great Shemogue.	"	Walter T. Goodwin.	24	92,858	8,817	10 53	11 50	June 27 to September 23.
Prince William.	York. . . .	N. E Hoyt.	25	280 723	27.294	10.28	10 00	June 5 to September 19.
Keswick Valley.	"	L. B. Christie.	21	131,479	12,359	10.63	10.00	June 12 to September 2.
Hainesville.	"	L. B. Christie.	17	102,094	9.750	10.47	10.00	June 13 to August 4.
Middle Southampton. . . .	"	David Schriver. . .	32	197,230	19 424	10 15	10.50	June 1 to September 19.
Stanley	"	Howard Douglas. . .	17	151.300	14,617	10 35	10 50	June 5 to September 2.
						Average	Average	Value
In 1905 there were 43 factories in operation			1,356	14,172,543	1,396,066	10.15	10.61	$148,215 42
In 1904 there were 53 factories in operation.			1.793	19,179,970	1,866.426	10 22	8 64	161,262 01

*Estimated.

CREAMERIES AND SKIMMING STATIONS IN NEW BRUNSWICK, 1905.

Name of Factory.	County.	Secretary or Manager	Number of Patrons	Lbs. of Milk Received.	Lbs. of Butter Made	Lbs. of Milk to one of Butter	Price per lb in cents	Time in Operation
†Elgin	Albert	John D. Frier	28	....	21.463	......	22.44	April 3 to Nov. 25.
†Elgin	“	Nelson Tait	63	24,398	35 970	.....	21 00	May 22 to Oct. 18.
†Woodstock	Carleton	Tilley & Dow	118	30,585	37.280	......	21 00	May 23 to Sept. 29.
Buctouche	Kent	M. McLaughlan	14	120.723	6,240	19.34	23.50	June 1 to Sept. 30.
St. Louis	“	Fidele Vantour	27	223 621	10,080	22.18	20.00	Nov. 1, 1904, to Oct. 31, 1905
†Sussex	Kings	S C. McCulley	190	2,115,541	256,482	...	22 00	Nov. 1, 1904, to Oct. 31, 1905
†Sussex	“	John D. Frier	54	....	19,750	....	22.20	March 28 to Dec. 30.
†Waterford S S	“	John D. Frier	36	501,625	25,530		21 60	March 4 to Dec. 8
†Lissonville S S	“	John D. Frier	28	46,894	2,134		22.00	April 12 to May 20.
†Rockville S.S.	“	John D. Frier	33	618,509	29,411	....	22 09	June 1 to Dec 30.
†Lower Millstream	“	John D. Frier	45	473,115	30,985	......	22.00	June 1 to Dec. 30.
†Collina S.S.	“	John D. Frier	21	252,824	11,720	......	21.25	April 11 to Oct. 31.
†Norton S S	“	John D Frier	31	257,849	12 252	......	21.00	May 6 to Oct 21.
†Midland S S.	“	John D. Frier	38	626,010	30,505	......	21.92	Jan. 1 to Dec. 30.
†Bellisle Creek S S	“	John D Frier	25	155 022	7,525	.....	22 00	May 31 to Oct. 21.
Springfield S.S.	“	John D Frier	20	142,172	6.300	22.56	21.00	May 31 to Oct. 16.
†Hampton	“	John D. Frier	52	45.551	24,038	......	22 50	Jan. 1 to Dec. 30.
Carsonville S S.	“	John D Frier	16	36.080	1,545	23.35	22.00	April 14 to May 22.
Head of Millstream S.S.	“	John D. Frier	32	30,989	1,385	22.38	22 00	April 19 to May 22
†Jefferies Corner	“	Wm. P. Fowler	64	580,627	53,326	.....	22.00	April 1 to Dec. 31.
†Hammond River S. S.	“	Wm. P. Fowler	..	....	....	......	......	April 1 to Dec 31.
Havelock	“	C. F. Alward	70	332,722	18,821	17.67	22 70	Nov. 1, 1904 to Oct. 31, 1905
†Corn Hill	“	James H. Brown	50	135,237	8,466	....	23 50	April 3 to Dec 23.
Clover Hill S S	“	R. Allen Cassidy	18	30.625	1,341	22.83	25 34	Nov. 1, 1904, to May 1, 1905
Berwick S.S	“	John Northrup.	30	170.200	7,652	22.24	25.00	April 17 to Oct. 31.
St. Anne	Madawaska	Jean St. Pierre	22	144,202	6.069	23.76	21 00	June 2 to Oct. 16.
St. Basil	“	J. G. Michaud	53	478,880	22,123	21.64	20.70	May 9 to Oct. 27.
Lower St Leonards S.S.	“	Rev. F. Dugal	34	281,952	13.443	20.97	22.25	May 8 to Oct 31.
Chamboard	“	Andrew Levesque	32	338 800	17,000	19.92	20 50	May 15 to Oct. 30.
St. Leonards	“	Soucie & Martin	42	386.282	17,683	21.85	21.00	May 8 to Oct. 23.
Albertine	“	Vital Albert & Sons	45	430,077	20,458	21.02	21.00	May 15 to Oct. 20

CREAMERIES AND SKIMMING STATIONS IN NEW BRUNSWICK—*Continued.*

Name of Factory	County	Secretary or Manager	Number of Patrons	Lbs. of Milk Received	Lbs. of Butter Made	Lbs. of Milk to one of Butter	Price per lb. in cents	Time in Operation.
Carron Brook	Madawaska	F. Xavier Long	40	287,967	13,618	21.14	20.49	May 22 to Sept. 19.
*Nappan	Northumb'land	Geo. E. Fisher	29	342,696	16,083	21.30	22.00	May to Oct.
†St. John	St. John	W. H. Bell	60	....	29,000	.....	23.00	April 1 to Oct 31.
Falls Brook	Victoria	Rev. F. Dugal	56	593,906	28,316	20.97	22.25	May 8 to Oct 31.
†Petitcodiac	Westmorland	Harry F. Hughes	70	200,000	43,419	.....	22.50	Nov. 1, 1904 to Oct. 31, 1905
Memramcook	"	J. B. Gaudet & Sons	20	90,400	3,675	24.60	21.00	June 22 to Oct. 30.
Baie Verte S. S.	"	John D. Frier	31	128,358	5,326	24.10	21.00	June 19 to Sept. 30.
						Average	Average	Value of Product.
In 1905 there were 38 factories in operation.			1,637	10,654,439	896,414	21.13	21.84	$195,810.83
In 1904 there were 39 factories in operation.			1,664	19,267,544	907,125	21.29	19.70	178,707.57

† All or a part of the butter was manufactured from gathered cream.
* Estimated.

Note: A number of the factories have a good demand for cream for ice cream, which reduces their output of butter to a considerable extent.

Statement of the Value of Cheese and Butter Made in New Brunswick Factories, 1896-1905.

Year.	Value
1896	$ 76,151.46
1897	107,507.67
1898	145,642.40
1899	215,999.93
1900	284,325.00
1901	286,248.00
1902	341,776.04
1903	387,639.42
1904	339,969.58
1905	344,026.25

THE DAIRY REPORT.

In summing up the dairy work carried on during the past year, we regret having to report a falling off in the output, due to conditions already referred to. It will be noticed from the factory returns that there has been a considerable shortage in the make of cheese, also a small decrease in butter. The prices, however, were good, and, while the make was short, the returns to the factorymen exceeded those of 1904 by $4,056.67. The net returns from sales of cheese and butter amounted to $344,026.25; and, when we take into consideration the conditions our dairymen were obliged to work under, this is certainly a very satisfactory showing. No doubt, under favorable conditions, or even in case of a drouth, with the lessons they have learned the past two seasons in regard to the value of a soiling crop, we will again see the output from our factories increase as it formerly did.

Eleven factories that made cheese in 1904 did not make last season. Of this number, five were operated as creameries and skimming stations; the others were mostly small factories, situated in sections that were badly affected by the drouths of the last two seasons, and the owners found the herds reduced to such an extent, and the cows that had been wintered were in such poor condition, that there was not a sufficient supply of milk offering to warrant them in operating the factories. It will take these sections some few years to regain their original standing in dairy work.

In creamery work, the cream gathering system is gaining ground rapidly. Of the thirty-seven creameries and skimming stations in the Province last season, nineteen were operated either wholly or partially on that system. The Woodstock Creamery closed four skimming stations that they ran in 1904, and put on cream routes. The system has many advantages for the farmer, such as allowing him his skim milk fresh and warm from the seperator to feed his young stock, a great reduction in the cost of delivering the cream to the creameries, especially in sections that are not thickly settled, etc.; but it also has its disadvantages if not properly managed. If the cream is not cared for by the farmer, if it is allowed to remain about his place for three or four days, and in some cases a week, under conditions favorable to the development of all kinds of objectionable ferments and odors before being delivered to the creamery, as is sometimes the case, it reaches the butter maker in such a condition that it is impossible under any circumstances to turn out a good article of butter.

These are all conditions that can be overcome, and we trust that the patrons of our creameries, and our butter makers, will make an earnest endeavor and see to it that the quality and reputation of our butter is not injured by the adoption of this system.

While the past season was unfavorable for the production of milk, climatic conditions were favorable for the manufacture of a good article of cheese and butter; and the demand was such that it went out of the factories promptly, either direct to the consumer, or into the mechanical cold storage rooms, which are now at the disposal of the dairymen during the warm weather. Consequently, we do not hear reports of heated cheese and greasy butter, as was frequently the case when factorymen were obliged to store their goods in the ordinary curing and cold storage rooms at the factories. Mechanical cold storage can and is doing a great deal towards placing our dairy products on the markets in good condition, and at such times as they can be disposed of to the best advantage.

The milk producers and the cheese and butter makers, however, should not lose sight of the fact that it is only when the goods are in first-class condition when put in storage that they can be expected to come out right. Cold storage will not remove any defects in either cheese or butter due to carelessness on the part of the patron in handling his milk, or the man who manufactures it. Therefore, it should be the aim of both to see that the milk is properly cared for and handled from the time it is drawn from the cow until turned out in the finished product, and then placed in cold storage at once.

The cost of production, which enters so largely into the profits to be derived from any business, is a question that has not received the attention that it should from the dairymen of this Province. The dairymen cannot control the markets under conditions as they are today, but he can increase his profits very largely by careful selection, breeding and feeding of his herd. The scales and the Babcock tester do not occupy the position they should in the great majority of our dairy stables.

The thirty days test of dairy herds, conducted throughout Canada during the past year by the Dominion Department of Agriculture, indicates that a great many farmers are keeping cows at a loss. They keep neither a record of the quantity of milk produced, or the food consumed, but follow about the same old haphazard routine from year to year, thinking because other dairymen are making money, they must also be making a profit.

In the State of Minnesota, investigation has been made in regard to the existing conditions among dairy farmers. The work has been carried on carefully, accurate returns of a great many herds have been secured, also the cost of maintainance, and the returns have been a revelation to the careless and unthinking dairyman.

The following is a copy from a statement published recently of the standing of two of the herds:

Herd No. 52.—Contains 18 native cows, selected with a view to dairy type:

Yield of milk per cow per year, lbs, ...	6,457
Yield of butterfat per cow per year, lbs., ...	260
Net returns from creamery, per cow, ...	$54 60
Cost of keep per cow per year, ...	30 00
Net profit from butterfat per cow per year, . .	24 60

The feed was as follows:—Pasture, $6.00, mixed hay and fodder corn, $12.00; barley meal and bran, equal parts by weight, $12.00.

Herd No. 58:—Contains 9 Shorthorn and Guernsey grade cows, 7 of the former, 2 of the latter:

Yield of milk per cow per year, lbs., ...	2,518
Yield of butterfat per cow per year, lbs., ...	96
Net returns from creamery, per cow, ...	$20 16
Cost of keep per cow per year, ...	27 00
Net loss from butterfat per cow per year,. . . .	6 84

The feed was as follows:—Pasture, $6.00; mixed hay and fodder corn, $11.00; oats, corn meal and bran, $10.00.

It will be noted that while one herd returned its owner a profit of $24.60 per cow during the year, the other made a loss of $6.48 per cow. This was on butterfat alone, and when we take the skim milk into account, it adds considerable to the returns from the profitable herd.

The individual milk record, also cost of production and returns received for same from a herd of twenty cows, owned by Mr. McLeod, of Penobsquis, one of the enterprising dairymen of that section, will be of interest, and is as follows:

1904 AND 1905. NAME OF COW.	Age.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Totals.
	Yrs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Lady Bobs	6	13	860	612	533	551	479	485	471	453	506	395	270	5628
Lady Gordon	2	...	54	504	539	570	556	576	534	533	592	496	416	5430
Belle	7	6	277	698	649	621	559	551	510	559	563	317	74	5384
F. M. L.	11	450	430	267	196	30	...	...	960	968	657	742	651	5331
Topsy	4	630	654	424	415	431	394	403	389	381	441	380	335	5277
Alice	3	170	...	...	522	705	597	583	526	544	567	432	266	4909
Mary Jane	4	69	634	504	506	474	434	431	407	429	464	316	155	4823
Blackie	3	288	645	415	394	410	373	407	404	409	438	305	164	4652
Annie	4	228	558	397	387	381	341	364	334	339	415	372	370	4486
White	6	...	347	733	633	537	531	415	433	347	303	153	5	4437
Kerry Quayle	2	...	192	416	406	445	450	456	366	370	398	335	252	4086
Maggie	8	189	633	480	433	410	394	346	299	294	277	109	...	3819
Daisy	7	630	555	386	356	384	351	273	130	273	102	....	...	3440
Betty	4	256	473	315	280	278	266	276	234	319	197	73	....	2967
Jessie	4	...	164	307	291	292	261	283	269	260	300	276	258	2961
Carey	2	...	70	337	288	331	325	318	313	198	342	247	154	2923
Trilby	9	511	496	309	309	325	319	306	218	*	...	...	...	2693
Spott	6	160	...	106	566	572	525	493	259	*	...	...	...	2681
Fannie	5	...	544	454	405	374	376	327	189	*	...	...	...	2669
Susie	4	...	301	463	404	422	368	384	110	*	...	..	...	2452

* Sold for Beef.

COST OF PRODUCTION.

To 35 tons hay at $6.00	$210.00
40 tons corn at $2.50	100.00
Pasture at $5.00	90.00
3½ tons cotton seed meal	103.25
1 ton gluten meal	25.00
5 tons wheat bran at $19.50	97.50
2 tons wheat bran at $22.00	44.00
	$669.75

RECEIPTS FROM MILK.

By Milk to St. John	$230.25
Cream to butter factory	593.89
Milk to cheese factory	72.80
Milk and cream sold locally	19.00
	$915.94

There was a profit of $246.19 from the sales of milk and cream; no account was taken of that used by the family, and the skim milk which was fed to the young stock.

Mr. McLeod came to the conclusion some years ago that he was not getting the returns from his dairy that he should. At that time his farm only produced feed enough for eight cows and a span of horses. He purchased six grade Jerseys and a pure-bred Jersey sire, and began to improve his herd. In 1896 he commenced weighing his milk and keeping individual records, also having the milk from each cow tested for butterfat two or three times a year, and was soon in a position to know the profitable cow from the boarder.

It will be noticed from the above statement that the greatest quantity of milk is produced during the Fall and Winter months, when butter is always bringing the highest prices, and there is more time to give the cows the care and attention they require. He also states that the eight cows he had in 1889 produced an average of 125 pounds of butter per cow, that they freshened in the Spring, and that the cost of feed was not so much as now, nor was the profit as large.

We hope to see many more of our dairymen follow Mr. McLeod's example, and we are pleased to state that the Dominion Government proposes continuing the work began last year, and are prepared to do the testing where twenty or more patrons of any cheese factory or creamery will agree to take samples, and weigh the milk of three days during each month for the whole milking period.

The quantity of Cheese and Butter manufactured in the Province during the years 1901, 1902, 1903, 1904, 1905, by Counties, is as follows:

CHEESE

Counties	1905	1904	1903	1902	1901
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Albert........	......	25,000	62,101	61,754	81,200
Carleton.......	66,197	102,238	167,035	177,525	294,307
Gloucester......	22,969	33,895	29,987	32.869	38,641
Kent..........	5,363	19,520	12,188	7.511	14,823
Kings.........	705,894	986 815	1,021,080	953,587	780,523
Madawaska.....	103,466	107,726	32,915	69,595	80,080
Northumb'land.	......	3,738	......	......	....
Queens	66,616	107,296	154,440	139,379	107,371
Sunbury.......	......	....	5,831	10,000	9,000
Victoria........	93,458	120,347	119,700	68,419	62,729
Westmorland...	198.659	238,899	256,516	239,429	209,909
York	83.444	120,804	134,584	150,665	208,787
Totals.....	1,396,066	1,866.426	1,996,377	1,910,733	1,887,370

BUTTER

Counties	1905	1904	1903	1902	1901
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Albert	57,433	68,648	64,568	....	....
Carleton.......	37,280	56,151	81,216	72,721	124,229
Charlotte......	....	12,000	29,036	32,000	16,000
Kings.........	549,168	523,748	474,639	355,168	206,097
Kent..........	16,320	19,638	22,857	17,813	18,021
Madawaska....	110,394	137,483	129,502	111,237	55,403
Northumb'land.	16,083	16,083	16,083	11,956	9,341
St John.......	29,000	....	....	....	....
Victoria.......	28,316	29,024	35,790	90,083	76,264
Westmorland...	52,420	44,350	41,395	38,598	37,271
York..........	....	....	....	11,335	....
Totals.....	896,414	907,125	895,086	750,911	542,626

Average price received for cheese and butter manufactured in the Province during the year 1901-2-3-4-5:

Year	1905	1904	1903	1902	1901
	c.	c.	c.	c.	c.
Cheese	10.61	8.64	10.10	9.92	9.28
Butter	21.84	19.70	20.38	20 37	20.46

It will be noticed from the above statement that the average price of cheese last season was nearly two cents, and that of butter over two cents per pound higher than in 1904, due, no doubt, in a large measure, to the comparatively light stocks in Great Britain, and an improved consumptive demand. In fact, stocks of cheese and butter were never nearly so low on the dairy markets of the world as they were at the opening of the past season.

In regard to the markets for next season, we believe the outlook was never brighter. From the most reliable information we have been able to gather, stocks of cheese in Canada are about 200,000 boxes short of the quantity in store a year ago. Stocks in England are also reported as being very light compared with this time last year.

The butter trade is in a very satisfactory condition. Canadian butter never gave better satisfaction, or took as high a standing in the markets of Great Britain, where it comes in competition with the butter from the Danish, New Zealand, Australian, Argentinan, Siberian, Sweedish, Finland, and, of late years, Irish creameries.

We find it is impossible to give an accurate statement of the quantity of cheese and butter exported from the Province. The statement received from the factorymen gives the quantity as well as sold locally, and we know that large quantities purchased by local dealers are held and sent forward during the fall and winter months, that factorymen report as being sold locally when making returns.

The product of nearly all our factories has a good reputation on the markets of Great Britain and the West Indies, where it comes in competition with that from other countries, and the chief fault found by the experts is that there is not a greater quantity produced.

CANADIAN EXPORTS.

The returns from the combined exports of cheese and butter from Canada for the year amount to over $30,000,000, an increase over last year of nearly $10,000,000. The markets of London, Liverpool, Bristol, Glasgow and Manchester are the chief outlets for Canadian cheese and butter.

The shipments to each market, in detail, for a period of four years, is as follows:

PORT	1905		1904		1903		1902	
	Cheese Boxes	Butter Pckgs.	Cheese Boxes	Butter Pckgs.	Cheese Boxes	Butter Pckgs.	Cheese Boxes	Butter Pckgs.
London	930.412	215,152	860 65[illegible]	120.187	1,131,627	84,176	925.200	214 823
Liverpool	565,557	155.725	584.984	140 786	548 784	79,519	515 325	128 580
Bristol	421.442	153.560	383.358	153.456	388,392	134,012	398.043	114.880
Glasgow	80,900	39,568	91.756	34,592	154.364	22,182	124,125	35.154
Manchester	70,277	9,192	90 355	40,677	65.269	17,688	58.301	38 775

CHEESE FACTORIES.

It has been deemed advisable to continue the publication of the approximate cost of the equipment of cheese and butter factories. The cost of a suitable building for a cheese factory, 25x30 feet, and suitable to accommodate the milk of three hundred cows, would be in the vicinity of $450. It should be centrally located, easily drained, and have a good supply of cold spring water.

EQUIPMENT.

1	6 h. p. Upright Boiler (with large fire box),	$125 00
2	5,000 lb. Milk Vats (22 gauge tin),	90 00
1	Curd Sink (15 feet long),	15 00
1	Gang Press and 12 Hoops (14 in. in diameter),	75 00
1	24 Bottle Facile Babcock Milk Tester, complete,	26 00
1	Double Beam Platform Scale, 600 lbs. capacity,	20 00
1	Counter Scale, 240 lbs. capacity,	7 00
1	Weighing Can, with Gate, capacity 600 lbs.,	10 00
1	Set Curd Knives,	8 50
1	Curd Mill (Harris or Gosselin patent), $8 00 to	14 00
1	Curd Pail (flat sides),	75
3	Common Pails (tin),	90
1	Curd Scoop,	50
3	Vat Brushes,	1 25
2	Water Barrels,	2 00
	Piping Valves, etc.,	6 00
		$401 90

To this must be added freight charges from point of shipment.

BILL OF STOCK FOR CHEESE FACTORIES.

Sills.—Four sills (spruce), 26 ft. x 8 ins. x 8 ins.—splice. Two sills (spruce), 30 ft. x 8 ins. x 8 ins.—end.

One cross timebr, 30 ft. x 6 ins. x 8 ins.

Two carrying timbers, 26 ft. x 6 ins. x 8 ins.—centre splice.

First floor joists.—Sixty first floor joists, 15 ft. 6 ins. x 2 ins. x 8 ins.—9202 centre.

Second floor joists.—Thirty second floor joists, 30 ft. 0 ins. x 2 ins. x 6 ins.—24 in. centre.

Rafters.—Sixty rafters, 23 ft. 0 ins. x 2 ins. x 6 ins.—24 in. centre.

Collar beams.—Thirty collar beams, 15 ft. 0 ins. x 1 in. x 6ins.

Posts.—Four corner posts, 11 ft. 0 ins. x 4 ins. x 6 ins.

Studs.—Sixty studs (sized), 11 ft. 0 ins. x 2 ins. x 4 ins. Twelve studs (sized), 11 ft. 0 ins. x 2 ins. x 4 ins.

Six hundred lineal feet, 2 ins. x 4 ins.—ends.

Plates.—Two hundred and twenty lineal feet, 2 ins. x 4 ins.—double plates.

Boards.—Seven M hemlock boards.

Flooring.—Seventeen hundred feet spruce flooring.

Sheathing.—Four M feet net spruce sheathing (make allowance for waste).

Shingles.—Twenty-two M 1st clear cedar shingles, laid 4 1-2 ins. Sixteen M 2nd clear cedar shingles, laid 5 1-2 ins.

Eight hundred square yds. paper.

Fifty-four feet pine saddle boards (lineal), 4 1-2 ins.

Fifty-four feet pine saddle boards (lineal), 5 1-2 ins.

Four corner boards, 12 ft. 6 ins. x 5 1-2 ins.

Four corner boards,12 ft. 6ins. x 6 1-2 ins.

Three hundred and fifty superficial feet plancher.

Two hundred and twenty-five (lineal) feet pine facia, 6 ins.

Two hundred and fifty (lineal) feet pine shingle facia, 4 ins.

One door, and door frame jambs, 5 3-4 ft.; door, 3 ft. x 7 ft. x 1 3-4 ins.

Seven window frames and sashes jambs, 5 3-4 ft. Plain casings, 1 1-4 ins., head with level cap; sashes, 4 lights, 15 ins. x 30 ins.

Twelve posts, for shelving, 10 ft. 6 ins. x 5 ins. x 5 ins.

Sixty crass supports, for shelves, 3 ft. 0 ins. x 2 ins. x 4 ins.

Thirty-six shelves, each 22 ft. 0 ins. x 1 1-2 ins. x 15 ins.

Seventy-five superficial feet 1 in. x 3 in. strapping, for two rows bridging.

Five hundred and fifty bricks (brick flue).

Four sheets, 10 ins. x 14 ins.—tin.

One piece sheet lead, 8 ins. x 3 ft. 0 ins.

Thirty cedar posts, at least 4 ft. 6 ins. in the earth.

If 1 1-2 spruce matched flooring can be procured, it should be used in the making-room instead of the double floor, in which case 800 feet can be deducted from the amount previously named, and 700 feet net of the 1 1-2 in. used instead.

CREAMERY.

The size and plan of building depends largely upon the site, and the following is the necessary outfit to equip a creamery with a capacity suitable for three hundred cows:

EQUIPMENT.

1 12 h. p. Boiler (horizontal,	$145 00
1 7 h. p. Engine,	120 00
Injector (3-4 inch),	9 00
Bricks, lime, labor for setting boiler and engine,	75 00
1 Cream Separator, capacity 2, 500 to 3,000 lbs. per hour, . . $350 00 to	500 00
1 Receiving Vat, 4,000 lbs.,	40 00
1 Cream Vat, 1,000 lbs.,	35 00
1 Churn and Buttter Worker combined (Success or Simplex pattern),	180 00
1 Set of Scales, double beam, capacity 600 lbs.,	20 00
1 Set Counter Scales, capacity 240 lbs.,	6 00
1 24 Bottle Facile Babcock Milk Tester (steam),	26 00
5 doz. Composite Test Bottles,	6 00
Shaftings, pulleys, belting, valves, fittings, etc.,	100 00
Common Tin Pails,	1 00
2 Cream Pails (heavy),	1 00
1 2 lb. Flat Butter Print,	2 50
3 Vat Brushes,	1 20
1 Sink,	1 50
3 Dippers,	1 00
1 Cream Stirrer,	1 00
	$1,271 20

To this amount must be added the freight from point of shipment, and cost of installation.

SKIMMING STATION BUILDING AND EQUIPMENT.

Building, including ice house, 16x24 feet.

1 7 h. p. Boiler, with large fire box,		$135 00
1 Cream Separator, 1,800 to 2,500 lbs. capacity per hour,	$350 00 to	500 00
1 Receiving Vat, 1,000 lbs. capacity	10 00 to	15 00
1 Tempering Vat,		8 00
Pails, brushes, composite bottles,		5 00
Piping and connections, valves, etc.,		5 00
2 Barrels and Sinks,		3 00
4 Cream Cans, at $4.00,		16 00
		$687 00

NEW BRUNSWICK FARMERS' INSTITUTES

REPORT OF THE SUPERINTENDENT.

I am pleased to be able to report that very much more interest is being taken by the farmers from year to year in this educational work; over one thousand more people attended the meetings during the season of 1905 than in 1904.

I would again urge the different Institutes to select for Secretary a man who is interested, and would give attention to the matter of working up a good attendance. In several cases, about all the Secretary appears to do is to charge $10 or $15 as salary, with the result of very poor attendance at meetings in his locality.

During the months of August and September last a series of seventeen meetings was held in the French-speaking districts of the Province, which were all well attended, except at Memramcook, Westmorland County, and Drummond, Victoria County. These meetings were addressed in the French language by Mr. A. T. Charron, Assistant Chemist of the Experimental Farm, Ottawa, who spoke mostly on soil cultivation and the growing of clover, and Dairy Superintendent L. C. Daigle, of Moncton, who took up dairy subjects and the importtion of good seed in the production of farm crops.

From the 28th of September to the 9th of November the regular series of meetings were held.

A total of 140 meetings were held during the year; total attendance 6,375; number of addresses given 319.

Three new Institutes have been organized during the year at Upper Gagetown, Wickham and New Jerusalem, all in Queens County.

On 18th September the following bulletin was sent to the Secretary of each Farmers' Institute, which will show the places where meetings were held, speakers for each division, date of meeting, and their subjects:

DIVISION No. 1.

Delegates:—G. B. Cotterelle, of Milton, Ontario, and F. E. Sharpe, of Midland, Kings County.

———, Temperance Hall, Jerusalem, September 28.
———, Hall, Shannon, September 29.
Cambridge, No. 29, Church Hall, Lower Jemseg, October 7.
Cambridge, No. 29, Hall, Narrows, October 9.
Springfield, No. 74, Forresters' Hall, Belleisle Creek, October 10.
Springfield, No. 74, Public Hall, Avonmore, October 11.
Sussex and Studholm, No. 21, Memorial Hall, Sussex, October 12.
Sussex and Studholm, No. 21, Hall, Penobsquis Station, October 13.
Shediac, No. 15, Agricultural Hall, Shediac, October 14.
Dorchester, No. 18, School House, Taylor Village, October 16.
Sackville and Westmorland, No. 17, Hall, Point DeBute, October 17.
Sackville and Westmorlandl, No. 17, Town Hall, Middlle Sackville, October 18.
Botsford, No. 16, School House, Melrose, October 19.
Botsford, No. 16, Hall, Baie Verte, October 20.
Hampton and Norton, No. 22, School House, Passekeag, October 21.
Hampton and Norton, No. 22, Temperance Hall, Nauwigewauk, October 23.
St. Martins, No. 54, Temperance Hall, St. Martins, October 24.
St. Martins, No. 54, Union Hall, Fairview, October 25.
Upham and Hammond, No. 69, Upham Public Hall, October 26.
Upham and Hammond, No. 69, Agricultural Hall, Hillsdale, Oct. 27.
Kingston, No. 23, Public Hall, Kingston, October 30.
Kingston, No. 23, Public Hall, Long Point, October 31.
St. John, No. 51, Hall, Red Head, November 1.
St. John, No. 51, Temperance Hall, Lower Golden Grove, November 2.
Simonds and Rothesay, No. 52, Lake View Hall, Upper Loch Lomond, November 3.
Pennfield, No. 26, Spinny's Hall, Pennfield, November 4.
St. Andrews and St. Croix, School House, Waweig, November 6.
St. Andrews and St. Croix, Agricultural Hall, Bayside, November 7.
St. Andrews and St. Croix, Hall, Oak Bay, November 8.

DIVISION NO. 2.

Delegates:—Duncan Anderson, of Rugby, Ontario, and N. S. Dow, of Woodstock, N. B.

Fredericton, No. 34, Parish Hall, Springhill, September 28.

Fredericton, No. 34, Hall, Upper Gagetown, September 29.

Southampton and Queensbury, No. 37, Foresters' Hall, Millville, October 2.

New Denmark, No. 48, Patron Hall, Salmonhurst, October 7.

New Denmark, No. 48, Peterson School House, October 9.

Grand Falls and Drummond, No. 78, School House, Gillespie Settlement, October 10.

Andover, No. 46, School House, Carlingford, October 11.

Andover, No. 46, School House, Lower Perth, October 12.

Perth, No. 76, School House, Gladwin, October 13.

Kincardine, No. 60, School House, Upper Kintore, October 14.

Kincardine, No. 60, Agricultural Hall, Kincardine, October 16.

Aberdeen, No. 45, McIntosh Hall, Glassville, October 17.

Wilmot, Wicklow and Kent, No. 44, Sherwood Hall, Centreville, October 18.

Wilmot, Wicklow and Kent, No. 44, Kearney's Hall, Florenceville, October 19.

Simonds, No. 83, Orange Hall, Middle Simonds, October 20.

Woodstock and Northampton, No 41, Tilley Hall, Jacksonville, Oct. 21.

Lindsay, School House, Lindsay, October 23.

Richmond, No. 40, Forresters' Hall, Debec, October 24.

Fosterville, Orange Hall, Fosterville, October 25.

Manners Sutton, No. 39, Agricultural Hall, Harvey Settlement, Oct. 27

Blissville andl Gladstone, No. 61, Agricultural Hall, Blissville, October 28.

Westfield and Petersville, No. 55, Victoria Hall, Welsford, October 30.

Westfield and Petersville, No. 55, Agricultural Hall, Westfield, Oct. 31.

Elgin, No. 56, Agricultural Hall, Elgin, November 1.

Elgin, No. 56, Hall, Mapleton, November 2.

Petitcodiac and Havelock, No. 20, Orange Hall, Victoria Mills, Nov. 3.

Petitcodiac and Havelock, No. 20, Public Hall, Havelock, November 4.

DIVISION NO. 3.

Delegates:—W. F. Stephen, of Huntingdon, Quebec, and C. F. Alward, of Havelock, Kings County.

Fredericton, No. 34, Hall, Nashwaaksis, October 7.

Prince William, No. 38, Agricultural Hall, Lower Prince William, October 9.

Douglas and Bright, No. 36, School House, Scotch Lake, October 10.

Douglas and Bright, No. 36, Agricultural Hall, Keswick, October 11.

Stanley, No. 35, Agricultural Hall, Stanley, October 12.

Stanley, No. 35, Orange Hall, Williamsburgh, October 13.

Doaktown, No. 81, Swim's Hall, Doaktown, October 14.

Blissfield, No. 71, Hall, New Salem, October 16.

Blissfield, No. 71, Donald Hill, Upper Blackville, October 17.

Blackville, No. 75, Public Hall, Blackville, October 18.

Derby, No. 8, Public Hall, Renous Bridge, October 19.

Derby, No. 8, Temperance Hall, Millerton, October 20.

Chatham and Nelson, No. 9, Temperance Hall, Chatham, October 23.

Chatham and Nelson, N. 9, Johnston School House, Napan, Oct. 24.

Durham, No. 79, Parish Hall, Jacquet River, October 25.

Dalhousie, No. 2, Hall, Point Le Nim, October 26.

Dalhousie, No. 2, Hall, Dundee, October 27.

Addington and Eldon, No. 1, Robinsonville, October 28.

Addington and Eldon, No. 1, Campbellton, October 30.

Bathurst, No. 3, School House, Cross Roads, South Tetagouche, Oct. 31.

Bathurst, No. 3, School House, Cross Roads, Oardville,November 1.

Rogersville, No. 62, Hall, Acadiaville, November 2.

Richibucto, No. 13, Public Hall, Rexton, November 3.

Richibucto, No. 13, Public Hall, St. Nicholas River, November 4.

———, Hall, Kouchibouquac, November 6.

Moncton and Fox Creek, No. 72, School House, Shediac Road, Nov. 7.

Wellington, St. Marys and Dundas, No. 66, Barnes' Hall, Buctouche, November 8.

Wellington, St Marys and Dundas, No. 66, School House, St. Marys, near R. C. Church, November 9.

SPEAKERS' SUBJECTS.

Division No. 1.

G. R. Cotterelle, Milton, Ontario.—"Poultry." "Eggs in Winter." "Preparation for Market." "Poultry Houses." "Hatching and Raising of Chickens, Artificially and Naturally."

F. E. Sharp, Midland, Kings Co.— "The Importance of Soil Moisture, and how best to Retain it." "The Importance of Good Seed in the Production of Farm Crops." "Profitable Poultry Production." "Breeding and Feeding of Swine." "Summer Care and Feeding of the Dairy Cow."

Division No. 2.

Duncan Anderson, Rugby, Ont.—"Rotation of Crops." "Soil Cultivation." "Manure, its Care and Application." "Clover as a Fertilizer." "Cultivation of Field Roots and Potatoes." "Hog Breeding and Feeding." "Cattle Raising." "Breeding Heavy Horses." "Farming as an Occupation." "Our Country."

N. S. Dow, Woodstock, N. B.—"Butter Making." "Advantages of Dairy Farming." "Buying and Selling Dairy Products." "The Cream Gathering Creamery." "Seed Fairs."

Division No. 3.

C. F. Alward, Havelock, Kings Co.—"Summer Care of Dairy Cows." "Winter Care of Dairy Cows." "Pork Production." "Raising Calves for Dairy Purposes." "Soil Cultivation and Moisture." "Co-operative Dairying." "Seed Selection."

W. F. Stephen, Huntingdon, Que.— "Soil and Soil Tillage." "The Profitable Production of Milk." "Corn and the Silo." "The Dairy Cow, How to Rear and Feed Her." "Good Roads and How to Make Them." "Keeping Farm Accounts and Records." "Stable Manure and Fertilizers." "How to Interest the Boys and Girls in Farming." "Making the Most of Farm Life."

DIRECTIONS TO SECRETARY OF FARMERS' INSTITUTE.

The responsibility of advertising and arranging for meetings is with each local institute.

As soon as this bulletin is received, select such subjects as you prefer from the advertised list of the Delegates who are going to your locality, and send the memorandum of same to the Superintendent at Fredericton, *at once.* He will have posters advertising the meeting printed and forwarded to you for distribution. Cost of posters will be $1.00 for 25, or $1.25 for 50.

If you get the posters printed in your own locality, send a copy to the Superintendent soon as ready.

It is suggested that all posters should be printed on a good quality of white paper, with red ink. It improves the appearance to have a border on them. If all posters are so printed, they will be distinct from ordinary bills, and will soon become known.

Head your posters with the name of Institute and Number (the number will be the same as Ag. Soc. No.), and sign with name of President and Secretary. All members of the Agricultural Society are members of the Institute without further payments. Canvas each meeting for members.

Send information as per form A. in minute book soon as meetings have been held.

Every member will receive all the publications issued by the Department of Agriculture. Any further information required will be cheerfully given.

THOS. A. PETERS,
Sup. Farmers' Institutes.

DEPARTMENT OF AGRICULTURE,
Fredericton, N. B., September 18, 1905.

On the following pages will be found the names of Institute officers, reports of local Institutes, and extracts from some of the addresses given at the Institute meetings.

FARMERS' INSTITUTE OFFICERS FOR 1906.

ALBERT.

Elgin, No. 56.—President, Robt. A. Smith, Elgin; Vice-Pres., Howard Steeves, Elgin; Sec.-Treas., F. W. Goddard, Elgin.

Harvey and Alma, No. 57.—President, Abner A. Reid, Upper New Horton; Sec.-Treas., Edgar Cannon, New Horton.

Hopewell and Hillsborough, No. 58.— President, R. Chesley Smith, Hopewell Hill; Vice-Pres., Byron Peck, Riverside; Secretary-Treasurer, Geo. M. Russell, Hopewell.

CARLETON.

Richmond, No. 40.—President, M. J. Green, Green Road; Vice-Pres., J. Y. Fleming, Debec; Sec.-Treas., W. E. Fleming, Debec.

Woodstock and Northampton, No. 41.—President, Judson Briggs, Lindsay; Sec.-Treas., Chas. L. Smith, Woodstock.

Wilmot, Wicklow, and Kent, No. 44.—President, W. J. Owens, Tracy Mills; Vice-Pres., Geo. J. Cronkite, Centerville; Sec.-Treas., H. T. Scholey, Centreville.

Aberdeen, No. 45.— President, G. B. Reid, Glassville; Vice-Pres., John McIntosh, Glassville; Sec.-Treas., Alex Scott, Glassville.

Middle Simonds, No. 83.— President, W. C. Rideout, Simonds; Vice-Pres., Aaron Shaw, Simonds; Sec.-Treas., W. N. Raymond, Simonds.

Lindsay.—President, Harry Briggs, Lindsay; Vice-Pres., Ralph Briggs, Wakefield Centre; Sec.-Treas., G. A. Thomas, Lindsay.

CHARLOTTE.

Pennfield, No. 26.—President, A. C. Pool, Pennfield Centre; Vice-Pres., Malcom McKay, Pennfield Centre; Sec.-Treas., E. C. Justason, Pennfield Centre.

St. Andrews and St. Croix.—President, R. Richardson, Waweig; Vice-Pres., C. B. Lawrence, Bay Side; Secretary, Rev. Hunter Boyd, Waweig; Treasurer, Thos. Faloon, Waweig.

GLOUCESTER.

Bathurst, No. 3.—President, P. J. Power, North Teteagouche; Vice-Pres., Jno. J. Miller, Bathurst; Sec.-Treas, T. Edwin Carter Bathurst.

New Bandon, No. 4.— President, N. R. Richey, New Bandon; Vice-Pres., Robert Hickson, Stonehaven; Sec.-Treas., Horace Hornbrook, New Bandon.

Caraquet, No. 68.—President, Rev. J. T. Allard, Caraquet; Vice-Pres., Thos. J. B. Legere, Caraquet; Sec.-Treas., J. E. Lanteigne, Caraquet.

Beresford, No. 73.—President, A. D. Doucet, Beresford;Vice-Pres., Jean B. Cormier, Elmtree; Sec.-Treas., B. H. Cormier, Elmtree.

KENT.

St. Louis and St. Ignace, No. 12.—President, Franics O. Richard, McLeod's Mills; Vice-Pres., H. Barrieau, St. Louis; Sec.-Treas., M. J. Porier, St. Louis.

Richibucto, No. 13.—President, Geo. N. Clark, Rexton; Vice-Pres., Robert Lennox, Rexton; Sec.-Treas., John Jardine, Jardineville.

Wellington, St. Marys, and Dundas, No. 66.—President, John McKee, Little River; Vice-Pres., Lewis Bourke, Buctouche; Sec.-Treas., Dr. David D. Landry, Buctouche.

KINGS.

Sussex and Studholm, No. 21.—President, H. M. Campbell, Apohaqui; Vice.-Pres., S. C. McCully, Sussex; Sec.-Treas., A. B. Maggs, Sussex.

Hampton and Norton, No. 22.—President, W. D. Fowler, Hampton; Vice.-Pres., C. E. Dixon, E. R. DeMill, Hampton; Sec.-Treas., Jas. E. Hoyt, Hampton.

Kingston, No. 23.—President, L. T. Crawford, Kingston; Vice-Pres., Chas. Peters, Elmhurst; Sec.-Treas., O. W. Wetmore, Clifton.

Westfield and Petersville, No. 55.—President, F. W. C. Nase, Nerepis Station; Vice-Pres., J. B. Barton, Armstrong Cor.; Sec.-Treas., D. M. Hamm, Grand Bty.

Upham and Hammond, No. 69.—President, Wm. Jamieson Hillsdale; Sec.-Treas., Jas. Payne, Hillsdale.

Springfield, No. 74.—President, S. H. Johnston, Midland; Vice-Pres., F. E. Sharp, Midland; Sec.-Treas., R. W. Menzie, Midland.

MADAWASKA.

St. Basil, No. 50.—President, Dolphis Daigle, St. Basil; Vice-Pres., Regis Mercure, St. Basil; Sec.-Treas., D. I. Daigle, St. Basil.

St. Hilaire, No. 65.—President, Hector D. Daigle, Michaud; Vice-Pres., Donat Daigle, Michaud; Sec.-Treas., Honoie Cyr, St. Hilaire.

Madawaska, No. 77.—President, J. Augure Bernier, Edmundston; Sec.-Treas., R. I. Beaulieu, Edmundston.

St. Francis, No. 84.—President, Antoine Cyr, St. Francis; Vice-Pres., Antonine Berube, St. Francis; Sec.-Treas., Emile Nadeau, St. Francis.

Derby, No. 8.—President, John Betts, Millerton; Vice-Pres., E. J. Parker, Derby; Sec.-Treas., J. J. Clark, Millerton.

Chatham and Nelson, No. 9.—President, Geo. J. Dickson, Chatham; Sec.-Treas., Geo. E. Fisher, Chatham.

Rogersville, No. 62.—President, Rev. M. F. Richard, Rogersville; Vice-Pres., J. D. Buckley, Rogersville; Sec.-Treas., Fidele Richard, Rogersville.

Blissfield, No. 71.—President, Z. Gilks, Gilks; Vice.-Pres., Wm. Donald, Upper Blackville; Sec.-Treas., Ronald Hurley, Gilks.

Blackville, No. 75.—President, B. N. T. Underhill, Blackville; Vice-Pres., James Bean, Blackville; Sec.-Treas., R. M. Grindley, Blackville.

Doaktown, No. 81.—President, H. Swim, Doaktown; Sec.-Treas., Wm. Murray, Doaktown.

QUEENS.

Cambridge, No. 29.—President, Chas. L. Slipp, Mouth of Jemseg; Vice-Pres., Alfred E. McAlpine, Lower Cambridge; Sec.-Treas., John W. Foshay, Mouth of Jemseg.

New-Jerusalem.—President, T. W. Short, Shortholm; Vice.-Pres., W. T Inch, New Jerusalem; Sec.-Treas., Beverley Pender, Clones.

Upper Gagetown.—President, John F. Hoben, Upper Gagetown; Vice-Pres., Arnold McCain, Burton; Sec.-Treas., H.Ashley Estabrooks, Upper Gagetown.

Wickham.—President, Isaac W. Carpenter, M.P.P.; Vice-Pres., Myles G. McCready, Shannon; Sec.-Treas., John H. DeLong, Shannon.

RESTIGOUCHE.

Addington and Eldon, No. 1.—President, Wm. W. Doherty, Campbellton; Vice-Pres., Archibald McKenzie, Campbellton; Sec.-Treas., Jos. H. Taylor, Campbellton.

Dalhousie, No. 2.—President, John Barberie, Dalhousie; Vice-Pres., John McNish, Point Le Nim; Sec.-Treas., James E. Stewart, Dalhousie.

Durham, No. 79.—President, E. McMillan, Black Point; Vice-Pres., T. Hayes, Doyle Settlement; Sec.-Treas., Samuel Laughlin, Black Point.

Balmoral, No. 80.—President, Rev. John Wheten, Balmoral; Vice-Pres., Edward Bernard, Balmoral; Secretary, D. A. Arseneau, Balmoral; Treasurer, Hon. C. H. LaBillois, Dalhousie.

ST. JOHN.

St. John, No. 51.—President, Dr. T. Fred. Johnstone, St. John; Vice-Pres., Sam'l Creighton, Silver Falls; Sec.-Treas., R. R. Patchell, St. John.

Simonds and Rothesay, No. 52.— President, Wm. T. Boyle, Golden Grove; Vice.-Pres., John McBrien, Golden Grove; Sec.-Treas., Alex. F. Johnstone, Upper Loch Lomond.

St. Martins, No. 54.—President, James Rourke, St. Martins; Vice-Pres., Dr. H. E. Gilmore, St. Martins; Sec.-Treas, Michael Kelly, St. Martins.

SUNBURY.

Blissville and Gladstone, No. 61.—President, J. S. Hayward, Central Blissville; Vice.-Pres., J. F. Duplisia, Central Blissville; Sec.-Treas., H. H. Smith, Blissville.

VICTORIA.

Andover, No. 46.—President, James E. Porter, Andover; Sec.-Treas., F. E. Henderson, Andover.

New Denmark, No. 48.—President, Andreas C. Jensen, Foley Brook; Vice.-Pres., Carl O. Hansen, Salmonhurst; Sec.-Treas., A. G. Jensen, Salmonhurst.

Kincardine, No. 60.—President, Wm. McPhail, Bon Accord; Vice-Pres., C. R. Inman, Kilburn; Sec.-Treas., Andrew Philip, Upper Kintore.

Perth, No. 76.—President, Alex. Walker, Tilley; Sec.-Treas., J. F. Tweddale, Arthurette.

Grand Falls and Drummond, No. 78.—President, Walter Warnock, Grand Falls; Vice.-Pres., Wm. Sweezey, Grand Falls; Sec.-Treas., James Watson, Grand Falls.

WESTMORLAND.

Shediac, No. 15.—President, J. G. Wilbur, Shediac; Vice-Pres., James Frier, Shediac; Sec.-Treas., Fred. Ingils, Shediac.

Botsford, No. 16.—President, Wm. Prescott, Baie Verte; Vice-Pres., Jas. Berry, Melrose; Sec.-Treas., J. R. Taylor, Little Shemogue.

Sackville and Westmorland, No. 17.—President, Frank Trueman, Upper Point DeBute; Vice.-Pres., J. W. S. Black, Upper Sackville; Sec.-Treas., J. T. Carter, Sackville.

Dorchester, No. 18.—President, Jos. R. Taylor, Taylor Village; Vice-Pres., Dr. E. T. Gaudet, St. Joseph; Sec.-Treas., Patrick T. Legere, Memramcook.

Petitcodiac and Havelock, No. 20.— President, Thos. G. Perry, Havelock; Vice-Pres., John A. Hughes, Petitcodiac; Sec.-Treas., Harry Douglas, Petitcodiac.

Moncton and Fox Creek, No. 72.—President, Edwin T. Charters, Chatersville; Sec.-Treas., D. D. Legere, St. Anselme.

Barachois, No. 82.—President, Thos. L. Gallant, Barachois; Sec.-Treas., Mathais Arseneau, Upper Abougagan.

YORK.

Fredericton, No. 34.—President, John A. Campbell, M.P.P., Spring Hill; Vice.-Pres., F. S. Hilyard, Fredericton; Sec.-Treas., Thos. A. Peters, Fredericton.

Stanley, No. 35.—President, M. W. Crotty, Stanley; Vice-Pres., Dr. Sterling, Stanley; Sec.-Treas., D. J. Griffiths, Stanley.

Douglas and Bright, No. 36.—President, A. E. Kilburn, Mactaquack; Vice-Pres., Geo. J. Colter, Mouth of Keswick; Sec.-Treas., Chas. Moore, Scotch Lake.

Southhampton and Queensbury, No. 37.—President, Peter Johnson, Millville; Sec.-Treas., S. A. Jones, Millville.

Prince William, No. 38.—President, Josiah Lawrence, Lower Prince William; Sec.-Treas., N. E. Hoyt, Prince William.

Manners-Sutton, No. 39.— President, Walter Piercy, Coburn; Vice.-Pres., Jas. Thompson, Harvey Station; Sec.-Treas., William McCulloch, Coburn.

North Lake.—President, R. Wesley Cropley, Fosterville; Vice-Pres., C. H. Gould, Fosterville; Sec.-Treas., Sam,l Foster, Fosterville.

REPORTS OF LOCAL FARMERS' INSTITUTES FOR THE YEAR ENDING NOVEMBER 30TH, 1905.

INSTITUTE DISTRICT			Membership ending Nov. 30, 1906.	Number of Meetings Held.	Total Attendance.	Number of Addresses Delivered.	RECEIPTS.				EXPENDITURE.					Balance on Hand.	Total.
County.	Number.	Name.					Balance from last Acct.	Members' Fees and Donations.	Provincial Grants.	Total Receipts.	Expenses for Meetings.	Secretaries' Salary, etc.	Ag. Literature for Members.	Miscellan'ous	Total Expenditure.		
							$ c.	$ c.	$ c	$ c.	$ c	$ c.	$ c.	$ c.	$ c.	$ c	$ c.
Albert	56	Elgin	52	2	68	4	58 02	13 00	15 00	86 02	3 50	6 00	......	1 69	11 19	74 83	86 02
"	57	Harvey and Alma	52	2	90	4	26 50	.....	15 00	41 50	5 50	10 00	......	50	16 00	25 50	41 50
"	58	Hopewell and Hillsborough	50	2	132	4	1 93	12 50	15 00	29 43	3 25	10 00	......	13 68	26 93	2 50	29 43
Carleton	40	Richmond	42	1	40	2	7 66	10 25	15 00	32 91	1 50	5 00	......	20 50	27 00	5 91	32 91
"	41	Woodstock and Northampton	...	1	30	2	.....	.....	15 00	......	.....	.....		.....	......	......	...
"	44	Wilmot, Wicklow and Kent	100	2	87	5	45	25 00	15 00	40 45	13 25	10 00	......	17 00	40 25	20	40 45
"	45	Aberdeen	65	1	38	2	30 00	.....	15 00	45 00	1 00	.....	......	20 00	21 00	24 00	45 00
"	83	Simonds	40	9	137	27	.....	.....	15 00	......	.....	.....	......	.....	......	......	....
"	..	Lindsay	35	6	114	25	40 33	7 50	15 00	97 33	16 30	5 00	......	44 70	66 00	31 33	97 33
Charlotte	26	Pennfield	62	2	43	6	8 90	15 50	15 00	39 40	6 00	10 00	13 00	2 50	31 50	7 90	39 40
"	..	St. Andrews and St. Croix	51	18	260	24	16 85	12 75	15 00	44 26	4 25	.....	5 70	17 89	27 84	16 42	44 26
Gloucester	3	Bathurst	82	4	127	8	25 02	20 50	15 00	60 52	3 85	10 00	......	1 50	15 35	45 17	60 52
"	4	New Bandon	50	2	80	5	72 25	12 50	15 00	99 75	5 00	2 00	1 00	39 00	47 00	52 75	99 75
"	68	Caraquet	100	1	400	2	.....	.....	15 00	15 00	.....	.....	......	.....	15 00	......	15 00
"	73	Beresford	56	2	370	4	4 55	14 00	15 00	33 55	5 25	10 00	......	50	15 75	17 80	33 55
Kent	12	St Lewis and St. Ignace	101	2	140	4	1 31	25 25	15 00	41 56	2 51	15 00	....	25 00	42 51	* 95	42 51
"	13	Richibucto	67	3	60	8	20 25	16 75	15 00	52 00	16 25	10 00	......	5 00	31 25	20 75	52 00
"	66	Wellington, St. Mary's and Dundas	125	1	40	2	.....	.....	15 00	......	.....	.....	......	.....	......	......	.....
Kings	21	Sussex and Studholm	....	2	79	4	.....	.....	15 00	....	.....	.....	......	.....	......	......	.....
"	22	Hampton and Norton	96	2	80	4	21 78	24 00	15 00	60 78	3 00	10 00	8 20	1 54	22 74	38 04	60 78
"	23	Kingston	142	5	170	16	44 20	35 50	15 00	94 70	6 25	10 00	13 45	4 95	34 65	60 05	94 70
"	55	Westfield and Petersville	50	2	78	5	21 57	12 50	15 00	49 07	2 50	10 00	12 65	3 15	28 30	20 77	49 07
"	69	Upham and Hammond	50	2	106	4	76 72	12 50	15 00	104 22	.....	.....	....	.....	......	......	......
"	74	Springfield	50	2	110	4	35 16	12 50	15 00	62 66	1 50	10 00	10 80	40	22 70	39 96	62 66
Madawaska	50	St. Basil	46	1	200	3	49 65	11 50	15 00	76 15	4 00	10 00	......	75	14 75	61 40	76 15
"	65	St Hilaire	50	2	400	4	22 50	.....	15 00	37 50	1 00	.....	......	.....	1 00	36 50	37 50
"	77	Madawaska	82	1	75	2	......	.....	15 00	.....	.....	.....	....	....	15 00	.....	15 00
"	84	St. Francis	80	1	200	2	......	.....	15 00	.....	.....	.....	......	.....	.....	.....	......

Northumberland.	8	Derby	100	2	70	4	2 17	25 00	15 00	42 17	5 25	15 38	....	21 54	42 17	....	42 17
"	9	Chatham and Nelson	....	2	69	4	29 10	....	15 00	....	....	....	....	....	....	....	....
"	62	Rogersville	65	2	107	4	30 32	16 25	15 00	61 97	2 00	10 00	....	....	12 00	49 97	61 97
"	71	Blissfield	53	2	122	4	55 75	13 25	15 00	84 00	4 25	10 00	....	65	14 90	69 10	84 00
"	75	Blackville	50	1	50	2	83 15	8 75	15 00	56 90	6 00	15 00	....	15	21 15	35 75	56 90
"	81	Doaktown	50	1	40	2	16 80	12 50	15 00	44 30	11 30	10 00	13 00	....	34 30	10 00	44 30
Queens	29	Cambridge	42	3	223	13	10 72	10 50	15 00	36 22	7 31	16 86	4 00	3 83	32 00	4 22	36 22
"		New Jerusalem	51	1	150	4	....	12 75	....	....	....	....	....	....	....	12 75	12 75
"		Upper Gagetown and Burton	53	1	40	2	....	13 25	....	....	....	....	....	....	....	13 25	13 25
"		Wickham	54	1	70	4	....	13 50	....	....	....	....	....	....	....	13 50	13 50
Restigouche	1	Addington and Eldon	..	2	37	4	....	....	15 00		....	....	....	....	....	....	....
"	2	Dalhousie	45	2	37	4	12 13	11 25	15 00	38 38	3 50	15 00	9 80	52	28 82	9 56	38 38
"	79	Durham	60	1	14	2	17 25	15 00	15 00	47 25	5 00	13 75	....	50	19 25	28 00	47 25
"	80	Balmoral	50	1	75	2	....	....	15 00	....	....	....	....	....	....	....	....
St John	51	St. John	52	1	65	4	8 40	13 00	15 00	36 40	18 25	....	....	6 25	24 50	11 90	36 40
"	52	Simonds and Rothesay	41	1	43	2	26 40	10 25	15 00	51 65	1 00	10 00	....	14 00	25 00	26 65	51 65
"	54	St. Martins	36	2	101	4	37 25	9 00	15 00	61 25	3 00	10 00	....	....	13 00	48 25	61 25
Sunbury	61	Blissville and Gladstone	61	1	26	2	8 00	....	15 00	23 00	2 00	10 00	....	....	12 00	11 00	23 00
Victoria	46	Andover	32	1	24	2	20 18	10 70	15 00	45 88	2 75	10 00	20 18	1 25	34 18	11 70	45 88
"	48	New Denmark	56	2	54	3	10 94	14 00	15 00	39 94	4 25	10 00	5 10	2 33	21 68	18 26	39 94
"	60	Kincardine	49	3	70	7	20 36	12 25	15 00	47 61	2 05	10 00	....	12 38	24 43	23 18	47 61
"	76	Perth	....	1	36	2	....	....	15 00	....	....	....	....	....	....	....	....
"	78	Grand Falls and Drummond	52	2	67	4	38 66	13 00	15 00	66 66	4 00	5 00	1 00	18 00	28 00	38 66	66 66
Westmorland	15	Shediac	89	1	30	2	15 75	....	15 00	30 75	....	10 00	....	1 00	11 00	19 75	30 75
"	16	Botsford	173	1	55	2	6 59	43 25	15 00	64 84	2 25	15 00	....	1 39	18 64	46 20	64 84
"	17	Sackville and Westmorland	103	5	126	10	76 00	25 75	15 00	116 75	8 70	10 00	....	14 90	33 60	83 15	116 75
"	18	Dorchester	90	1	24	2	37 15	22 50	15 00	74 65	7 50	10 00	....	....	17 50	57 15	74 65
"	20	Petitcodiac and Havelock	50	2	70	4	31 85	12 50	15 00	59 35	5 25	5 00	22 80	10 95	44 00	15 35	59 35
"	72	Moncton and Fox Creek	768	2	115	4	....	....	15 00	....	....	....	....	....	....	....	....
"	82	Barachois	127	1	150	2	....	....	15 00	15 15	....	....	....	15 00	15 00	....	15 00
York	34	Fredericton	207	2	142	6	....	....	15 00	15 00	12 50	....	....	2 50	15 00	....	15 00
"	35	Stanley	52	2	123	4	13 65	13 00	15 00	41 65	4 25	10 00	....	13 65	27 90	13 75	41 65
"	36	Douglas and Bright	27	2	62	4	47 50	5 75	15 00	68 25	1 75	10 00	....	....	11 75	56 50	68 25
"	37	Southampton and Queensbury	99	1	42	2	71 65	25 75	15 00	112 40	5 00	15 00	....	25	20 25	92 15	112 40
"	38	Prince William	15	1	24	2	19 20	....	15 00	34 20	1 00	10 00	....	....	11 00	23 20	34 20
"	39	Manners Sutton	91	1	40	2	92 68	22 75	15 00	130 43	1 50	15 00	2 40	2 94	21 84	108 59	130 43
"	..	North Lake	....	1	28	2	....	....	15 00	....	....	....	....	....	....	....	....
			4689	140	6375	319											

NOTE.—Where blanks occur, full returns have not been received. * Due Treasurer.

Extracts from Speeches Delivered at Farmers' Institute Meetings.

CO-OPERATIVE DAIRYING.

BY C. F. ALWARD, HAVELOCK, KINGS CO.

This subject of dairying is one of great importance to the farmers of New Brunswick, particularly so in all the high-land districts. After having the privilege of travelling, quite minutely, in nearly all the different localities of this Province, I have come to the conclusion that New Brunswick is destined to become almost wholly a dairy district.

There are some localities, such as Sackville, Hopewell, and Mouth of Keswick, in which beefing can be carried on quite profitably, but outside of these few places mentioned, dairying is the most profitable branch of the live stock industry. It does not require any argument in this advanced age of experimental information to prove that the same amount of feed used in producing milk along up-to-date dairy lines, will give nearly double the profit than when used in producing beef, besides it does not require as much capital to run a dairy farm as it does to run a beef farm.

If we look into the different systems upon which dairying is carried on, we will find that there are several. In many sections of Eastern Ontario the factories are built, operated, and controlled by the manufacturer or some enterprising man with some capital at hand. In other places they are owned and operated by joint stock companies, and in a few places they are run co-operatively. It is not the object of the writer of this article to throw any obstacle in the way of any young man—or old man, for that matter—that has push and energy enough, and can see the possibilities of the dairy industry in one or more localities, and invest their money in putting up cheese and butter factories, and developing an industry profitable to themselves and community, but I think that there is a more excellent way, and that is for the farmers themselves to run the dairy business on a purely co-operative system.

In the joint stock companies, when dividends are declared, it sometimes happens that the shareholder that has the heaviest stock puts in the least milk, and *vice versa,* the man that has the least stock puts in the large bulk of milk, and hence pays the large dividents that are sometimes declared, in some cases as high as 50 per cent. In the matter of sole ownership of a factory, the business is carried on when it suits the proprietor best, and the history of such factories are that they only run a part of the year, or such time as a good profit is realized by the operator.

As the factory is owned and controlled by the patrons, the business can be carried on more easily the year round. There would be no such thing as operations of factory being closed on account of small profits to the maker or sole owner, but, instead, the patrons would make their interests first, and so procure a maker for the year, as manufacturers can be more easily obtained, and work more cheaply when employment is given the year round. Thus the producer of milk would be the manager of his own business from the production of the raw material on his own farm to the refined product ready to be put before the consumer, and no middleman has a right to a part of the profits thus far; and in this way only can the farmer hold his true position as a double manufacturer.

The co-operative dairy system, if carried out properly, is very beneficial in other respects. The milk can be brought to the factory by co-operation more cheaply than by individual effort, as the far-away milk, by such a system, can be brought to the factory as cheaply to the producer as the nearby milk, and it is of great importance to the patron that lives near the factory that the far-away milk be brought in, because the cost of manufacturing the milk into either cheese or butter lessens according as the output increases, and the man with the dairy interest at heart will not be inclined to withdraw his support from the co-operation work, because he has been asked to pay as much for getting his milk to the factory as does his co-laborer, although the factory may be nearer his door. Again, if the system of co-operation in dairying were adopted in the dairy centres of this Province, there would not be the necessity of building so many factories. I know of no central locality where milk could not easily be carried five or six miles, and if done in a co-operative way, the cost would be light indeed, as the dairy industry is becoming such a source of revenue to the Dominion, and is destined to become as such to this Province, we ought to enlighten our minds and be ready to give every promotion to any system that will help to build the people up in their efforts to establish an industry that will increase the Agricultural interests of the Province, and be a source of wealth, not only to the present generation, but to those that follow.

SOIL CULTIVATION AND ROTATION OF CROPS.

BY DUNCAN ANDERSON, RUGBY, ONT.

It is impossible to have a rotation of crops suitable to all soils and climates. But too many farmers are farming without any fixed rotation, getting too often poor results But the nature of the soil, climatic conditions and lines of production must always be the guide for a farmer in fixing his rotation. But for our high dry rolling upland farms, a four years' system will give the best results, viz.: 1st, a root or corn crop; 2nd, grain; 3rd, clover; 4th, pasture. In this rotation will be found the crops necessary for any successful rotation — the hoed crop as a cleaning crop, and a stand of clover. To prepare a foundation for a hoed crop, I would choose a clover or a pastured sod. Plow early in August not more than 4 1-2 inches deep, harrow well every night the day's plowing, for if left until the field is all plowed it will require three times as much work to make a fine top as if it had been done when the land was fresh turned up. Summer plowing soon becomes very hard when exposed to sun and air. The aim should be to harrow as soon as plowed, so that there will be a fine loose top soil to fill up all the air spaces, and cause the sod to rapidly decay. The land should be disced and harrowed several times during the fall months. The land should be again plowed, or ridged into narrow ridges; ridging would lock the decayed sod into the heart of the drill, which would prevent the fertility from being washed out, especially in some soils and situations, with the early spring rains.

A dressing of stable manure, about 18 to 20 tons per acre on the turnip or mangel ground, and 5 or 6 loads per acre less for potatoes, the coarsest manure being reserved for the potato land. If the land is not ridged, manure could be applied in winter. And if not spread on the surface, it could be piled in large piles in the field and spread on it after the grain crops were sown in the other fields. Drawing manure over soft land in the spring, the wagon wheels cut up and puddles it, that it is scarcely possible to work it into a fine tilth, which is so necessary in successful root growing. For corn growing I would manure on the sod, plow in the spring, work a fine top, and plant. With a continual working between the corn rows with cultivator and between the plants, hoe the manure and sod will soon decay, causing a heat near the surface of the ground, which is so important in successful corn growing.

The benefits in having sod for roots are: there will be fewer weeds than in stubble land. The land having had a rest, it will be more productive. The decayed sod will help to fertilize the soil. I have seen fine crops of potatoes raised, especially in a moist summer, when the land has been prepared, as I have described, coarse manure applied. Potatoes planted every third furrow, the rough manure being raked into the planting furrow on top of the potato sets. But for turnips the manure should be worked into the soil from the surface, but if plowed in, three inches will be deep enough; the soil and manure being worked thoroughly together with harrow and cultivator, we will get the full benefit of it on the first crop. The cultivator shopld be kept going constantly during the growing season to kill weeds and conserve moisture, which is so important, especially in a dry summer. When the field has been kept clean of couch, thistle, and other weeds, better not to plow for the succeeding crop, but work up a seed-bed two and a half inches deep, this will retain our clean fertile top; but if the hoed crop has not received close attention and there are some weeds showing, it will be better to plow a very shallow furrow; the land well worked, grain should not be sown too thick, and along with it eight pounds of red clover and five pounds of timothy per acre. Grass seed should be covered with a light harrow; rolling does not give enough covering for clover in a dry season. No cattle should be allowed to pasture the first fall on the new seeded fields. They pick off the young, tender clover plants too close. It requires all the first fall growth to help protect the young plants from the effects of the chilling influence of cold northwest winds in the early spring. Cattle tramping over the new seeded fields pack the land too solid to get good results from the hay crop.

Many farms in the Maritime Provinces are a mile or more in length. Long shaped farms are worked to better advantage by keeping the back ends of the farm down to permanent pasture, cultivating and manuring the fields adjacent to the buildings. With a four years' rotation, using the root crop as a cleaning crop, a thick stand of clover, with its far reaching tap roots going down into the sub-soil, helps to keep it open. A free circulation of air through our soils is most important. Clover helps to ventilate the soil. The dense shade of the clover leaves excludes the sun's rays from burning the surface of the land, also protects it from being dried out with the winds.

Where land is so shaded, its physical condition is changed, making it, when worked, more mellow and into a finer tilth. But where there is not sufficient help to grow root crops, and where stable manure is scarce, I would work a three years' rotation, grain, hay, pasture. The land should receive the same preparation as for a root crop twice plowed in the fall, or better once plowed, then ridged, well worked in the spring, sown not too thick with grain, seeded to grass with the same mixture as after the root crop, the decayed sod being on the surface will help to ensure a catch grass.

My own experience has been that with working a short rotation and feeding on my farm nearly all it produced, I have been able to increase the income from my land during the past fourteen years fully 30 per cent.

On the up-land farms of the Maritime Provinces a short rotation closely followed I believe will bring the same satisfactory results.

DAIRY FARMING AND BUTTER-MAKING.

N. S. DOW, WOODSTOCK, N. B.

During the autumn just passed, in company with Mr. Duncan Anderson, I attended a series of institute meetings in the Counties of Victoria, Carleton, York, Queens, Kings and Albert. These meetings are gaining in interest each year, as the farmers are becoming alive to the necessity of adopting better methods in their work. Mr. Anderson spoke on Soil Cultivation, Rotation of Crops, Live Stock, etc., while my subjects were Dairy Farming and Butter Making. The former subject I used in sections where co-operative dairying is carried on; the latter subject I took up with those engaged in private dairying.

One very noticeable feature of our circuit was the lack of interest in the sections where grain, hay and potatoes are sold from the farms. The good prices obtained for these products the last few years has had a bad effect upon the live stock industry in some parts of the Province. It seems to be a hard task to persuade a farmer who is making an easy living in a certain line to change his methods, and the result is that many will continue this method of soil depletion until the inevitable end is reached.

In stock raising sections and the dairy districts, a very different spirit prevailed. The meetings were largely attended and the interest keen—the cross-fire of questions made matters decidedly interesting to us, and we believe, from the expressions of the people, that they were the means of much pleasure and profit.

A very interesting meeting was held at Gladwyn, Victoria County, where I advised the establishment of cream routes, and a close attention to the dairy industry. These people are progressive and alive to their best interests, and they can make any line of farming a success.

I believe one of the greatest drawbacks to stock raising and dairying in Northern New Brunswick is the lack of proper barns and the scarcity of roots for winter feeding. The old-fashioned barn, 30 x 40, without root cellar and with poorly lighted and ventilated stable, will never help to make dairying profitable. While a good deal has been done to make the stables warm, there is still much to be desired in the way of light and ventilation.

We were met quite often with the turnip question, and when advocating the raising of roots, were asked quite frequently about the turnip flavours. I answered that turnips would not injure the milk of young stock or dry cows, and when fed in limited quantities to milch cows in winter, when butter was high, the effect would not be disastrous; and the benefit of turnips to the growing heifers and dry cows was hard to estimate, for if cows are kept in good health and thrifty condition during the winter months, the summer's work was sure to be much more profitable.

We had very interesting meetings at Harvey, Blissville, Hopewell Hill and Waterside, where butter making was taken up and a lively interest manifested. I advised the use of the hand separator, and either printed parchment for wrapping butter or a square box. I touched upon the necessity of washing the separator every time it was used, which did not suit some of those who were practising different methods.

I also advised the proper ripening of the cream, which should not be allowed to get too sour, and should be stirred frequently, so that it may ripen evenly.

I also advised having the butter come in granular form, which would allow th buttermilk to be washed out, and increase the keeping qualities of the butter.

When butter is to be packed, I advised the square box, which is waxed on the inside and then lined with parchment paper, the paper being first soaked in brine.

Many questions were asked about the process, and some farmers had pointers to offer, which were new, and certainly of interest. One gentleman, who made a good deal of butter, packing the same and holding it until winter before he sold, told us of his method of keeping it in good condition. He did not cover the bottom and top of the box with a layer of salt, as many are in the habit of doing, but salted his butter in the ordinary way; then he had a large box which would hold all the tubs he made during the season, and as fast as a tub was filled, he put it into this box and covered it with salt. He claimed the result was all he could wish. I had never tried it and could not give an opinion, but much interest was created by the practice of exchanging ideas, and we expect good results from our efforts.

I may say that I had a good helpmate in my friend Mr. Anderson; and although he often outshone me in his ability to teach and please, yet I hope to be as fortunate in a partner should I ever again have the privilege of another such errand.

THE PROFITABLE PRODUCTION OF MILK.

BY W. F. STEPHEN, HUNTINGDON, QUE.

To my mind, this question has not been given the consideration from our farmers and dairymen that it is worthy of, for I fear too many of our farmers have not put enough thought, nor even business principles and methods, into their work, to give them the best results, or to enable them to know whether they are producing milk at a profit or a loss.

I wish to touch on three phases of this question, each essential to the success or failure of this great industry, viz.: The cow, the feed, the man. The latter possibly is the most important, as he has the power to control the first two factors.

In order to produce milk profitabily, we must have first class dairy animals. We must realize what the mission of the dairy cow is. She is simply a high class machine, of peculiar organism, which manufactures the rough foods of our farms, which we term raw material, and produces a high class product, milk, a complete human food, which may again be manufactured into other fine products—butter, cheese, etc. For all of these products there is a growing demand, both in our home and foreign markets, and we believe this demand will continue to grow for many years to come. And these markets will take all we can produce, provided we send them products of high class quality.

In this twentieth century we find manufacturers are adopting newer methods and putting in up-to-date machinery that will manufacture more raw material and turn out more finished product in a given time, aiming to have their mills give a larger output, at a very little more cost, thereby lessening the cost of production. We will therefore consider the dairy cow as a machine that manufactures the raw materials of the farm into a finished product. The farmer is therefore a manufacturer, and must secure the very best machines for his purpose that he can get. And these may be selected from one of the four dairy breeds or their crosses, viz.: Holstein, Ayrshire, Guernsey and Jersey. The question is frequently asked, "Which is the best dairy breed?" There is no best breed. We find *superior* and also *inferior* animals in all the dairy breeds. We find each breed has inherited characteristics peculiar to themselves. The Holstein and Ayrshire breeds are the more vigorous and hardy of the dairy breeds, and have the faculty of producing a large flow of milk, rich in caesine and a fair amount of butterfat. The Guernsey and Jersey breeds have the faculty of giving milk of a high color and rich in butterfat. It is for the dairyman to select the breed best suited to his conditions of soil and climate, and to the product he is about to put on the market. But the first essential to be considered in whatever breed may be selected, is strength and vigor of constitution in the individual animal, indicated by good lung capacity and heart action, and ability to consume and digest a large amount of rough feed to be elaborated into milk is indicated by a large mouth, strong lips, a large deep barrel, with well sprung open ribs, giving a large paunch or middle. We want also a large capacious udder, broad, long, deep, but not pendulous, with good sized teats, well set on. This cow, or milk machine, must be bred along right lines. And he is the wise farmer who pays attention to some of the laws of breeding, such as hereditary, selection and environment, etc. Best results are usually attained by using pure bred sires, but great care must be exercised in the selection of a sire, in that he comes from a good milking strain or family. And don't make the serious mistake (also too frequently made) of breeding from too young and immature sires, as they are not as prepotent, and will not give as strong and vigorous class, and in all our breeding operations strength and vigor of constitution must not be lost sight of. After the breeding comes the rearing of the calf and heifer; by feeding the calf and heifer liberally of those foods rich in protein, instead of fat, we grow up a strong, vigorous young cow, that will have the special function for which careful generations have fitted her, viz.: that of putting her food into milk, instead of putting it under her hide in the shape of flesh and fat.

THE FEED.— Food is the one thing that will make milk, other things being equal; the cow that consumes the most food will produce the most milk. This is the secret of the dairy cow's wonderful capacity for assimilating large quantities of food without retaining it under their hides. The dairy cow has been bred along these lines for many generations, and has become a notable machine for the farmer to keep, who raises a large quantity of roughage in the shape of coarse fodders and grains, and gives him a market for it at his own door. If she eats much she will return much. Therefore to get good results she must be fed liberally, especially with the cheaper fodders, such as clover hay, corn straw, corn ensilage, roots, and some good clean oat straw.

There are three rations we can feed our dairy cows, viz.: The starvation, the maintenance, and the profitable ration. The first is *poor* grass in summer, and *poor* hay and straw in winter. This ration will keep our cows *poor* all the time. They will give a *poor* flow of *poor* milk, and will always keep their owner poor.

The second, or maintenance ration, will give fairly good results, and "may keep body and soul together," and a small profit may be secured. But it is the profitable ration that will give the best results, both in respect to the cow and the dairyman as well. This ration consists of *good* grass in summer, supplemented, if need be, with a soiling crop, where pastures get somewhat dried up. Such a soiling crop as vetches and oats, peas and oats, and corn later on, and at times it may be profitable to feed a small grain ration if prices of grain and products will warrant it. *June grass* is the ideal feed for our dairy cows, and the idea should be to keep as near ideal conditions as possible, and for fall and winter feeding clover hay, corn ensilage and roots; the two latter gives the succulent foods; a little straw may be given, especially to our dry cows, and a grain ration to our cows in full milk. Now this means the pushing of the milk machines to their full capacity, through the period of their greatest usefulness, and then replace them by others. Now this is not cruelty, as some may term it; it is shown in the perfect health of the animals, for without perfect conditions neither machine nor animal will do its best work. It is simply encouraging to a high degree the special function for which careful breeding has fitted the animal. As to the foods fed, they must be raised in abundance, and cheaply, and must consist in their make-up of that which is required to make caseine, of which the larger part of milk is composed. Therefore we must feed those foods rich in protein, such as clover hay, green peas and oats, corn fodder, eusilage and roots as roughage, and our grain feeds may consist of wheat bran, oat chop, with a little barley and peas mixed in. These may be raised on the farm. Of the purchased foods, cotton-seed meal, gluten meal and oil coke all give good results, fed in conjunction with bran or oat chop. Timothy hay (unless cut very green), corn or barley, should not be fed very extensively to our dairy animals, being rich in carbohydrates and fat, as it fattens instead of producing milk; if used, it should only be in small quantities, and fed in conjunction with clover hay, bran, etc. Our aim should be to get as near a balanced ration as possible, which consists of 2.5 pounds protein, 12.5 pounds carbohydrates, 4 pounds fat, ad 24 pouds dry matter. The above is for a cow of about 1,000 pounds weight, per day. While this is recommended, yet no cast-iron rule can be laid down, as we must study the individuality of our animals; some may consume more food than others. The following is my favorite ration for winter, proved in many years' experience in dairying: For cows about 1,000 pounds in weight, 30 pounds corn ensilage, 12 pounds well cured clover hay, and 6 to 8 pounds straw. This to my dry cows in winter brings them through in fine shape. To my cows in full milk, giving 35 to 40 pounds per day, I add a grain ration composed of 3 to 4 pounds wheat bran, 2 pounds each of oats, peas and gluten meal; if peas cannot be secured, I add more oats and gluten meal, and a little barley. If I had not ensilage, I would increase the clover hay and feed mangels to my milkers and turnips to my dry cows. As the milk flow decreases, cut down the grain ration. My aim is to have variety in the ration and make it succulent and palatable, so that the cow will consume a large quantity. Liberal feeding of those foods, rich in protein, cannot be too strongly emphasized. Let us remember, a ration that simply keeps the cow in good health leaves no margin for profit. It should not be how little she would drink and eat, but how much of those cheap feeds she can profitably feed into her to turn into milk. And besides this, she gives us a *best-of-all* fertilizer, to put back on the land to maintain its fertility. Water she must have in abundance, as the cow is a ruminating animal; she requires a large quantity of water to keep her stomach and digestive organs in good working order, so that she may digest plenty of these coarse fodders. This water supply must be pure, plentiful, and within easy reach at all times, both summer and winter. This may be provided with a very little labor and cost on the average farm in New Brunswick, where there are so many fine springs of water. On many farms that I have seen they could have an excellent system of water-works, at a nominal cost, to supply both dwelling house and stables.

The man is possibly the most important of the three. Here is shown the capacity of the man in carrying out intelligent and business methods and principles, in breeding, selecting and caring for his stock, and to be a successful dairyman; all three must go together. The last is not the least important. We may have the choicest stock, and if not properly cared for, they will not give us best results. On the other hand, we may have very ordinary stock, and if well cared for may give us excellent results.

The dairy machine must be housed comfortably in this cold climate in well lighted, well ventilated stables. Such stables need not be very costly; lumber and nails, tar paper and glass, are within the reach of every farmer. I do not advocate the building of expensive stables for the average farmer; in many cases the old stables could be improved, by being made warmer, with more windows to give light, and better ventilation, with water in the stable before the cows, or in a yard close by, where they will not be exposed to travel too far to get it, for our dairy cows *must not* be left *long out* in the cold, exposed to storms, etc, when the mercury falls below freezing point, let alone zero, as it takes just so much more food to keep up the animal heat and energy, and cuts down the milk flow very materially. The milk machine is not an animal that requires a great deal of exercise; experience has proved this beyond a doubt. The intelligent dairyman will see that all these details in the care of the milk-producing machine are attended to; he will look after the health and cleanliness of his herd. Running a dairy herd under these conditions makes it better for the cow, for it is her object in life to produce milk, and she delights to eat palatable, nutritious food, and in return give a large quantity of nice rich milk. In my mind it is the very essence of contentment to go into a shady pasture where there is a full bite of sweet, juicy grass, or into a comfortable, well-lighted, well-ventilated, clean stable, where the animals are kept in good condition, well bedded, groomed, etc., where the cows are lying contented, ruminating their breakfast or dinner, which they have lately taken, preparing to give it back at milking time. This is their highest order of intelligence; in fact, is what this wonderful milk machine was made for. In this twentieth century, no dairyman should produce this high class product for food under unsanitary conditions, or in an uncleanly way, as milk is so susceptible to contamination. The stable floors should be tight, and swamp muck or cut straw used to soak up the urine, so as to make a larger quantity of valuable fertilizer. The cows should be kept well bedded, and groomed occasionally; let the milkers be cleanly in their habits, and clean, wholesome milk will be produced that may be sold for immediate use, or made into a high class product that brings the highest market price. The intelligent dairyman will not only give his cows the best of care, but will be kind to them as well, for kindness pays in the dairy herd every time. Again, the intelligent dairyman will run his business on business principles, and will only keep at work those machines that give a profit; the others will be discarded. To do this he will have to depend on the spring balance scale and the babcock test to determine this. The weighing of the milk one day per week, and take composite samples every six weeks, and have them tested, will be near enough for practical purposes; this will enable the farmer to know whether his cows are profitable or not; if not profitable, he can send them to the butcher and put profitable ones in their place. In giving attention to these details, trifling as they may seem, the dairy farmer turns his loss into profit; his labor, which seemed dull and heavy, has become more interesting and lighter; his dissatisfaction has turned to satisfaction; his bank account is getting larger; his farm is increasing in fertility; living has become a pleasure; and on the whole he is becoming a better citizen, and his country is becoming better thereby.

THE IMPORTANCE OF SOIL MOISTURE AND HOW BEST TO RETAIN IT.

BY F. E. SHARP, MIDLAND, KINGS CO., N. B.

This question of soil miosture bcoemes one of vital importance during a dry season, such as the one we have just had the past summer. Every tiller of the soil, no difference under what circumstances, has found that during a dropping season his crops have grown and yielded fairly well, where the soil is fertile, without much attention on his part. This is easily understood; there has been at all times within easy reach of the plant roots plenty of moisture. But when the dry season comes, how necessary for every farmer to know something of the principles of the circulation of water in our soils. During a heavy rain a large amount of the rainfall finds its way into little brooklets, and from them into the stream, and from these into the river, and so on to the sea. Most of this is lost, as far as rendering any direct benefit to the growing crops is concerned. The part taken in by the soil is what we have to depend upon. It passes down through the soil until it comes to the water level; that is where the water fills up all the space between the soil particles; this at some seasons of the year, even in our driest soils, is very near the surface, and at other times many feet from the top. The ideal depth for the water level is about two and one-half or three feet from the surface; water at this point comes readily to the surface by a force known as capillary attraction. This force is very nicely exemplified in the burning lamp; the flame causes the oil which is drawn up to undergo a chemical change, and it passes away in the form of gases, and more oil is drawn up to take its place, and just as long as the flame remains connected with the wick, so long will this chemical change go on. We are told that there is constantly a certain amount of evaporation going on from the surface of the earth even in the coldest of weather, but the greatest drain on the soil moisture is during the hot weather; it is then rapidly drawn to the surface by the heat of the sun and atmosphere, where the chemical change takes place, and it passes away in the form of vapour. Upon leaving the water level the moisture is slowly drawn upward around the soil particles in the form of film moisture, and when in this state is in the best possible form to be taken up by the roots of the growing plants. It has been found that during long dry spells of weather, the moisture has become exhausted by passing up through the soil and escaping into the atmosphere too rapidly, and consequently the growing crops suffered proportionately for the need of the moisture which was going off in vapour. The question at once arises: Is it possible in any way to conserve this moving moisture for the use of our plants? Every observing person has noticed that where a board, a pile of sawdust, or chip dirt, has covered the ground for any length of time, when removed the soil is always moist beneath, no difference how dry the weather may have been previously, while a few inches away it may be as dry as powder. The cause of this is very apparent, when one just stops and thinks. It is just because the chances for the moisture to escape has been cut off, and hence remains in the soil. Now, if it were only possible to have something on the surface soil among our growingcrops, we could keep back this moisture coming up through the soil and hold it for the use of our plants. We all know it would be impossible to have boards, piles of sawdust, or chip dirt among our crops, but by keeping up a thorough cultivation between the rows of our growing hoe crops, we can keep an earth mulch or dust blanket, which serves the same purpose. Every farmer who has worked a cultivator has noticed that wherever he has stepped behind the cultivator and firmly pressed the soil particles together again, that the dampness quickly comes to the surface; this packing together of the soil particles causes the re-union of the channels of communication for the moisture to pass readily to the surface and be evaporated. During the dry weather the cultivator should be put through all the hoe crops at least once a week, or as soon after each rain as it can be worked without puddling the soil.

What about our other crops? you say. Of course our grain crops cannot have a cultivator going through them weekly. I have noticed that the most critical period, as far as drouth is concerned, in a grain crop, is from the time it first comes up until it has got far enough along for its leaves to shade the ground from the burning rays of the sun; when it has got this far along it will stand a lot of dry weather. Our grain crops should have a fine seed bed prepared before sowing, and, where the land is rolled, it should have a stroke of the weeder or spike-tooth harrow in order to create a dust mulch on the surface. This cultivation can be done even after the crop has come up a few inches; though it may knock out a few plants, yet there will be sufficient extra growth and yield of the remaining ones to more than make up the loss of the few destroyed.

The moisture in the soils where we are growing our hay crops can be greatly conserved by the liberal growing of clover. The broad leaf of this plant shades the ground from the sun, and thus prevents the rapid evaporation that would otherwise take place, and having a long tap root, it will reach the moisture at a greater depth than most of grasses which only feed at the very surface. It is much easier to regulate moisture in soils containing a large amount of humus than where they are deficient in this valuable ingredient. In heavy soils, where the water level stands too near the surface, they should be underdrained. Let me ask every farmer who has been giving this important question consideration in the past, to continue to do so, for we can never know too much about it; and if there is any who has never looked into the matter at all, begin now to make it a study and you will be fully repaid.

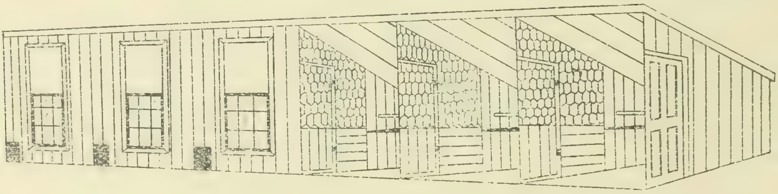
POULTRY.

BY G. R. COTTRELLE, MILTON, ONTARIO.

Every farmer taking an interest in his poultry gives considerable thought to the building where they are to be kept. In many cases some buildings now in use for something else could be fitted up to give first-class accommodation for poultry, but it is my intention now to refer to an ideal farmer's hen house to be built for that purpose.

In the first place, let us consider what are the principal points in connection with the hen house. First of all, it must be dry; second, it must be clean—therefore, it must be so arranged that it can be kept clean with the least possible labour; third, it must be free from drafts; fourth, it must be fairly well lighted, and, last, but not least, it must be convenient.

The first essential is that it must be dry. Therefore, when building our hen house, it is necessary to pay considerable attention to the location with that end in view. By selecting a suitable location, we can avoid dampness to some extent. Under location, we must also consider convenience, sun in the building, run for hens, and, also, allow plenty of room in case we might want to add to our present number of hens. We cannot have a building dry unless we have it well ventilated. In my experience it is next to impossible to have a system of ventilation work satisfactory in a hen house. I have tried two different systems, and when there is a current of air on the outside, the air will be all right, nice and fresh, on the inside; but when the air is dead on the oustide, the air is dead on the inside also. A building poorly ventilated will always show a frost coating of the walls, and any building with such coating on the walls will always have a damp floor. A damp floor is decidedly objectionable for several reasons; the birds will not give good results, are not as healthy, and it is impossible to keep the litter, that should always be on the floor in the winter time, in a dry state any length of time. Therefore, such conditions not only affect the profit of the flock, but ourselves as well, by way of inconvenience.



The above cut will show the style of a building which I have found quite satisfactory. It is cheap in construction, convenient, dry, and well lighted. This building is 60 feet long, 12 feet wide, 9 feet high in front, and 4 feet 6 inches in the rear. It will accommodate very nicely about one hundred hens, and is divided into six pens, allowing eighteen birds to each pen, we have room for one hundred and eight hens. The building has two ply of felt paper, one ply on each side of the studding, is boarded up and down on the outside and battened, and has planed jointed lumber on the inside; the roof is shingled, with a ply of felt paper under the shingles.

The partitions are made of wire, with the exception of two feet at the bottom and four feet at the back, which is of wood; the latter extends to the roof, on account of the roosts running right along the back of the building. The drop boards are four feet wide, two feet from the floor, and the roost is ten inches above the drop boards.

The cut shows three pens with front left out, in order to show the inside. There is no passage in this building, but in every partition there is a door opposite to doors in the other partitions. These doors swing either way on hinges, and an attendant can take a wheel barrow the entire length of the building without any difficulty; the doors will open when the barrow touches them, and close after it has passed through.

A passage should have no place in a farmer's hen house. It may be all right for the fancier. A passage is an extra floor space from which he gets no use, and requires an extra partition, which is an extra harbour for vermin, and necessitates a certain amount of trouble to keep clean.

The nests are hanging under the drop boards on the partitions, and may be lifted out and cleaned.

The birds are watered by cutting a hole in the partition about eight inches from the floor, and placing a shelf on each side to support a pan of water. In this way one pan will furnish sufficient water for two pens.

The floor is an ordinary ground floor, about a foot higher than the level of the outside ground. It might be better if made of cement, but a board floor is not at all satisfactory.

The windows reach nearly to the roof, and are within twelve inches of the floor. The bottom half is glass, the upper is made of two ply of factory cotton. This keeps the air in the building clean, fresh, and plenty warm enough. To many, such a building would seem altogether too cold, but if the birds are placed therein in the fall, before the weather is cold, and become educated to it, they will do much better than in a building much warmer, but poorly ventilated.

Six or eight inches of short straw should always be kept on the floor, the grain food placed in this, and the hens kept at work from morning to night.

THE FOUNDATION STOCK

The number of birds kept on the farms of this country average about forty-five, and there are about forty-five different kinds of birds in each flock. When such is the case, there will be forty-five different characteristics, and no good results can be obtained. The characteristics of a flock must be exactly alike; otherwise, when feeding for eggs in winter, the feed that puts one hen in proper condition for laying makes another too fat, and another too poor, and so on. It is not necessary to go to the expense of fancy stock, but by paying attention to the selection of birds of one distinctive breed, in five years any farmer can have a flock practically as good as pure-bred. Select the male birds from one of the breeds of the American class, or the Orphington. According to the American standard of perfection, we have poultry divided into a great many classes, but with the exception of the first three classes, the rest are all fancy, and the farmer has no use for them at all.

In the first three classes we have the Asiatic, the American and the Mediterranean breeds. In the Asiatic class, we have the Cochins, the Brahmas, and the Langshans, large fowls with feathers on their legs, and with a standard weight of from ten to twelve pounds. At one time it was said the Light Brahma, by unchallenged right, stood at the head of all pure-bred poultry. Go into any of the large fairs of the country a few years ago and you would find five times as many Light Brahmas as any other variety. The market at that time demanded a very large table fowl; to-day the demand is for a bird with a small bone, and as much flesh as possible on that bone. For this reason, the breeds of the Asiatic class are not the ideal to select male birds from.

In the Mediterranean class, we have the breeds that are non-setters, everlasting layers, with large combs, and not feathered to suit the cold climate without considerable care. When dressed, they do not make a first-class table bird. While many of the breeds of this class are good, yet they are not the ideal.

The ideal bird for a farmer to select his breeding stock from is one that will lay a large number of eggs, when eggs are at their highest price, make a first-class table bird, and also act as an incubator if necessary. In other words, a general purpose hen, and we can get such a bird from either Plymouth Rocks, Wyandottes, Orphington, Rhode Island Reds, or American Dominiques. One is practically as good as the other, but whichever breed one starts with, they must stay with, and, by so doing, at the end of five years they will have a flock practically as good as if made up of pure-bred birds, no matter how mongrel the stock may have been at the beginning.

THE FATTENING OF CHICKENS.

There is only one way to finish a chick after it comes to the age of three and a half or four months old, and that is the crate fattening system. The crates are six and a half feet long, sixteen inches wide, and twenty-two inches high, holding twelve chicks. It might be possible to make as much gain on a chick in the same time by running the twelve in a small yard or pen, but it would require a greater amount of labor to keep the birds clean, and for that reason the crate is much superior, slats being in the bottom of the crate, the droppings all pass through, and no extra labor is required to keep the birds clean. The fattening period extends about three weeks, but there is no objection to a four week's system. No gain in weight would be made by the four weeks, but a little better quality of flesh would be the result. However, a fairly well bred bird put in a crate at the age mentioned, and kept in that crate for three weeks, will make a gain of from two to two and a half pounds. The bird has no exercise, no way of developing the muscles, and, when killed and dressed, the flesh is much more tender and of a superior quality in every way. The feed used is simply the grain that is grown on the farm, ground as fine as possible, and mixed with milk into a very soft mash, and fed in the trough that runs along on the outside of the crate. No whole grain should be fed, as the bird has no exercise and cannot digest it. The birds should be fed regularly all they will eat up clean, but should be fed very lightly the first day or two. Two parts of fine ground oats with milk makes a splendid ration, or two parts of oats with one part barley, or two parts of oats with one of buckwheat, or two parts of oats with one of corn, all ground fine, makes splendid rations. It will cost about three and a half cents per pound of grain in the three weeks

The finishing of birds is one of the most important matters connectted with the poultry industry. If you do not finish hte bird, you are losing money. It ordinarily costs twenty-three cents to bring a bird to the age of four months, and if sold at that time, it practically is worth no more than twenty-four cents, or six cents a pound live weight. On some markets, and only on certain periods, will it bring more. If the bird is finished or crate fattened for three weeks, with an extra cost of seven cents for two pounds of grain, making the total cost thirty cents, then, if properly dressed, it will weigh in the neighbourhood of five pounds, and is worth twelve to fourteen cents per pound. Five pounds at twelve cents equals sixty cents, or thirty cents profit

KILLING AND DRESSING.

A bird should never be killed by cutting the head off, and any one placing birds on the market in a scalded condition is not only ruining the market at the present time, but for all time to come. The proper method of killing a bird is by breaking the neck and plucking immediately. Pluck down the back first, and when the wings give their first quiver, turn over on the breast, pluck the breast and elbow of the wings, going up over the bird. As the head is hanging down, leave the neck until the last; if you pluck the neck first you may leave traces of blood there when the feathers come out.

A bird killed in this way and plucked dry will very seldom tear. If the bird is in a healthy condition, and has not been in the cold, and thereby chilled before time of plucking, it is a very rare case of the flesh being marked by tearing.

MARKETING.

The better condition a bird can be placed on the market, no matter how well it may be finished, the better will be the result. A box made out of three-eighth material, eighteen inches square, and eight inches deep, will hold exactly twelve chicks. Put six in the bottom on their side, then a sheet of paper, then six or more on their side, then place the top on the box. Such packing will stand transportation either by team or rail exceptionally well.

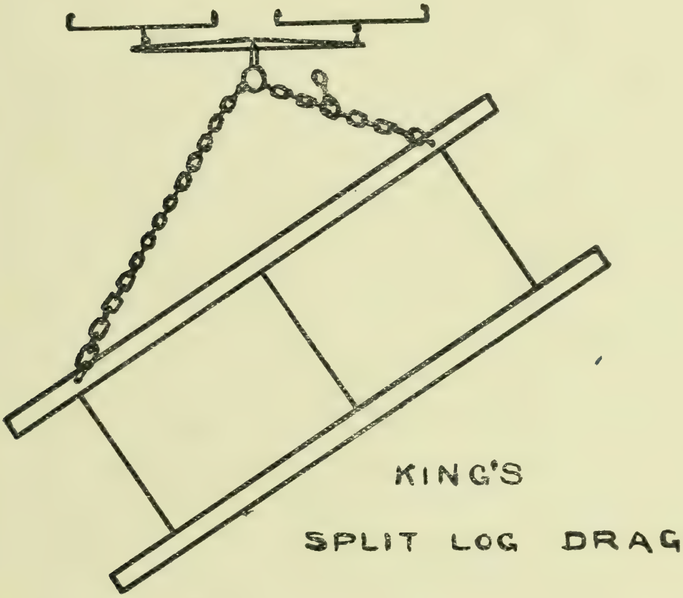
A dozen birds finished in the best of shape and of the best quality, placed on the market in this way, will realize for the producer two cents a pound more than the same birds placed on the same market in a careless condition.

(From Michigan Farmers' Institute Report).

IMPROVING COUNTRY ROADS.

BY D. WARD KING, MAITLAND, MISSOURI.

The use of the split log drag (see drawing) is no longer an experiment in Missouri and adjoining states. I began dragging in 1896, and have dragged regularly ever since. I dragged a half-mile stretch of road for four years before any of my neighbors began, but after they started they came with a rush. Now the county has a standing offer to furnish the material to any farmer who will make and use a drag, and fifteen were made this spring at one cross-roads blacksmith shop in one week. The Missouri State Board of Agriculture has made road dragging a feature of its farmers' institutes the past two years, and with fine results. A post-master reported one hundred and fifty miles of road dragged within a week after our meeting; another, in asking



for a road meeting this year, says last year's meeting did more for the betterment of the roads than anything in the history of the community.

The drag is not intended to replace the road machine, nor will road dragging do away with the necessity of macadamizing the main thoroughfares as soon as we can be educated to see the wisdom of spending a little money each year in crushing, spreading and rolling stone. The drag seems to be the connecting link between the old and the new; it keeps the old mud road in the finest possible condition, and creates a desire for the best.

THE METHOD OF DRAGGING.

The operation is extremely simple. I merely go over the stretch of road with a drag after every rain or wet spell. The land is rolling prairie, part of the soil is black, and part of it is yellow clay. The drag is made by splitting a log, placing the two pieces on edge about thirty inches apart (with the flat sides both facing in the same direction) and pinning them together. The lower edge of the front piece is protected by iron; an old wagon tire will do. The log should be ten or twelve inches thick, and about nine feet long. A chain or heavy wire is fastened a foot or eighteen inches from each end by which to haul it. A team is hitched so that the drag will move the dirt towards the centre of the road. The hitch is next in importance to the time at which the dragging is done. The right time is just as the road dries after a rain, or when it is thawed on top during the winter and spring. It should be dragged *every* time it rains.

Of course a smooth surface for travel is thus produced, but a more valuable result is that the road will shed the next rain instead of absorbing it. This is the reason why the road should be dragged after every rain, so that it will always be ready for the next. The way to make a good dirt road is to keep it so that the next rain will not go into it. This means dragging about once a month on an average. I drag from my own front gate to my neighbor's front gate, half a mile, taking about twenty minutes. I don't make very many trips to town before I have regained the time I expended in dragging, to say nothing of the gain to my neighbors and to the general public.

RESULTS ARE MARVELOUS.

This method is very simple, as I have said, but to one who is familiar with the ordinary dirt road under all conditions of season and weather, the results are little short of marvelous. Teams pass here on a sweeping trot when other roads are almost impassable. When other roads are in such a condition that loaded teams must be rested every few rods, the same loads are moved over this road at a free walk and without resting. Hon. Alex. Maitland, of Richmond, Mo., is quoted by the newspapers as saying: "I heard D. Ward King at Springfield, Mo., in January. I went home and made a drag. My road is a sticky yellow clay, and I have only dragged it three times, but the rural route mail carrier says it is 100 per cent. better than the other roads. To use his words, 'When I come to your road I can drive right along at a trot, but I have a devil of a time getting over the others.'"

This half mile stretch of road is high in the centre and very hard. Dragging *every time* not only makes it smooth for travel, but distributes the gravel all over the road, packing it evenly instead of merely under the tires and under the hoofs in parallel beaten paths; this increases the ability of the road surface to shed water. Dragging every time it rains spreads a thin layer of moist dirt over a moist surface and travel packs and pounds it together, every dragging adding just a little soil, and the whole being thoroughly amalgamated and consolidated. After years of spreading and packing I have a road on which anything less than a week's wet weather makes little impression. In the spring, when the ground thaws and unkept roads are so muddy and spongy that we say "the bottom has fallen out," this road remains in fair condition. It is also invariably dry one or two days before the other roads.

A horse's hoofprint will hold from a saucerful to a quart cupful of water. The neglected road represents a surface of upturned cups and saucers in which the water must stand until it either evaporates or soaks into the roadbed. Dragging every time it rains gets the road ready for the next, and there are never any cups and saucers waiting. This method also does away with mud holes and chuck holes at the bridges. After being dragged a few times the surface of the road stays up with the level of the bridges. One knows, only by the sound, that he has driven on or off a bridge. More dirt can be moved and more of a showing can be made by dragging the road during thaws in winter weather than at any other season. The soil is crumbly and mealy, and pushes to the centre very easily. If a road is dragged in March or April two or three times it will show the effect all summer. The weeds do not grow on the edge of the road as they do on a road that has not been touched after winter travel. But if one wants a road such as I have described, he must live up to the motto, "Keep the road ready for the next rain."

CORROBORATION.

When talking with road men in the river bottoms they invariably bewail the lack of drainage, while the clay hill men envy the river men because they have no washes. Both classes are quick to say, "If we lived on the black soil of the prairie we would have some faith in dragging, but here ———," and words fail them. Now the truth of the matter is that either clay or gumbo will make a more substantial road than the soft prairie soil. The self-same characteristics that make clay or gumbo so hard to get into good order after it once gets exceedingly bad will operate to keep it from getting into poor shape after it is once put into exceedingly good order. It will stay *good* just as tenaciously under good methods as it stays *bad* under bad methods. Certain gumbo roads, dragged of course, were used last summer, and summer before last, as training tracks by trotting-horse men and as speedways by the gentlemen drivers of the vicinity. Dr. C. N. Scott, of Mound City, Mo., says in a letter dated November 22, 1902: "I have travelled the gumbo road to Bigelow very often in the past five years, and never saw it so good as it has been since they began to drag it. I go there to speed my horses. It is as smooth as a race track. I have many times driven over this two miles at a three-minute clip." Mr. A. R. McNulty, of Mound City, has known this Bigelow road for thirty years, has been in the livery business for eleven years, and has had the mail contract for eight years. He usually goes over this road four times a day. Mr. McNulty writes: "This road between Bigelow and Mound City has been in better condition this summer since the dragging began than ever before."

Hon. John Kennish writes: "The (Bigelow) road is a United States star route, and is much travelled when fit for travel. It is over gumbo soil, and at times is impassable. This fall the road has been worked by the King system of dragging, and has been in better condition than ever before in the twenty years in which I have travelled it." Judge M. L. Nauman, of the Holt County Court, in writing of this road, says: "A portion of it has been so wet all summer that we could not make a start, but the other part never was so good before in the history of the road." It is but just to add that the season there was wetter than any on the records.

Question: How would you make a sand road better?

Mr. King: There are three ways of improving a sand road; by keeping it wet, by putting on clay, and by putting on oil.

Question: How heavy should the drag be; from what timber is it best to make it, and should one ride on the drag?

Mr. King: The drag should be light as possible. Red elm is a good wood to make it from, as it is tough and comparatively light. It is wise to ride on the drag, as by doing so the angle at which the drag is run may be easily changed.

Question: What are the dimensions of the drag?

Mr. King: It is 7 to 9 feet long, and spaced 30 inches.

Question: Will it move clay?

Mr. King: If you are to drag heavy clay you will find that in about six months the road will be so hard that it will be necessary to put iron on the edge.

Question: Will it keep the centre of the road full enough?

Mr. King: Yes. Don't fool around moving a whole lot of dirt into the middle of the road.

Question: With a heavy sod on the side of the road, can you increase the width of the road with this machine?

Mr. King: If after the road is in condition it is desirable to widen it, plow a furrow on each side of the road, and with the use of the drag spread this over the road. You have increased the width of your road two feet. If you desire it still wider, the next working repeat this operation, and so on until the road is the desired width.

MARITIME WINTER FAIR.

The Fifth Annual Maritime Winter Fair was held at the Fair Building, Amherst, N. S., on 4th, 5th, 6th, and 7th of December, 1905, under the same management as previous years—the Maritime Stock Breeders' Association, assisted by the Dominion, Nova Scotia, New Brunswick, and Prince Edward Island Governments.

President E. B. Elderkin presided at the opening ceremony. Seated on the platform were His Honour the Honourable D. A. MacKinnon, Lieutenant Governor of P. E. Island; Hon. Sydney Fisher, Minister of Agriculture; Hon. G. H. Murray, Premier of Nova Scotia; Hon. L. P. Farris, Commissioner for Agriculture; Hon. Mr. Longley; A. B. Copp, M. P. P.; Mayor Lowther; Warden Livingstone, Principal Cummings, Truro Agricultural College; Hon. James Stratton, and others.

In his opening remarks, President Elderkin deplored the unfavourable weather, which was the cause of a smaller audience than usually marks the opening of a Maritime Winter Fair, but he assured those present that the gentlemen who would address them would not only instruct, but delight everyone who would have the pleasure of listening to them. The executive of the Fair have done their very best to advertise this grand movement, and to bring together exhibits that are a credit to any Province in the Dominion. Gentlemen from Ontario have said that this Exhibition compares favourably with anything ever held in the Dominion of Canada. Four years ago some people said it was foolishness for us to attempt to put on a fat stock show in these Provinces, from the fact that we are not, as some think, an agricultural people, and that we cannot produce animals of the same quality as the Province of Ontario. I am of the opinion that we have as large a percentage of arable land in these Provinces as any other section of Canada, not excepting Ontario.

I am very glad, indeed, that we have with us to-night the Honourable the Minister of Agriculture, and had it not been for the enthusiasm and assistance that came to us from his Department, I fear this Fair would never have developed into the great factor that it is to-day. The several Provinces have also aided nobly, and I am satisfied that the people all feel that it is money well expended.

I do not propose to make any lengthy remarks, but I merely wish to welcome you who are here, and those who are shortly to come, to this grand school, that has for its object the uplifting of the agricultural classes of these Maritime Provinces. We ask of you to make yourselves thoroughly at home. We ask you to examine carefully and critically the exhibits that are put forth. We invite you to come and sit around the ring during the day-time, while the animals are being judged, and we ask you to come in the evenings and listen to the gentlemen who will deliver the addresses, and I am sure that you will learn much and will be delighted. If you do this, I am sure you will carry away with you information that will be of great value to you in your own work at home. We ask, that when you go home, you will become missionaries of this effort. This Fair costs a large amount of money, and is held only for the benefit of the people, and we want you to carry back a description of what you saw to those who are less fortunate than yourselves. We have faith in the future of these Provinces, and I believe we can make as great advancement here as in any other Province of Canada.

The Chairman presented His Worship Mayor Lowther, who, on behalf of the citizens, welcomed the people of the Maritime Provinces to Amherst. Warden Livingstone delivered a similar address on behalf of the County of Cumberland, heartily confirming the welcome of the Mayor.

HON. L. P. FARRIS,

Commissioner for Agriculture, New Brunswick.

Hon. Mr. Farris, in replying to the addresses of welcome, spoke of the great pleasure it always gave him to attend the Maritime Winter Fairs; he always looked forward to them, and it would have to be something of more than ordinary importance that would prevent his being present. The town of Amherst and the County of Cumberland always extend a very hearty welcome. We look upon Amherst as one of the most progressive towns in the Maritime Provinces, and Cumberland as one of your most prosperous Counties.

In New Brunswick we are trying to make progress along agricultural lines, because we well know that no Province can become great unless the agricultural classes are prosperous. We are paying particular attention to fruit growing, and we think we can grow fruit almost as well as you can in this Province; our Valley of the St. John we look upon as a worthy rival of your far-famed Annapolis Valley.

A few years ago we thought it would not be of much use to bring apples from New Brunswick to an exhibition in Nova Scotia; but last year, when the apples from our Province were placed alongside of your own, we felt we had nothing to be ashamed of in the comparison. A considerable number of illustration orchards have been set the past two years, and more will be set next spring. These orchards will demonstrate what can be done with proper cultivation and care, and will also show us what varieties are best suited to our conditions. We look upon you as the most successful fruit growing people in Canada; sections of your Province are equal to the Niagara District. We are patterning after you, and we intend to learn from you.

We have also had a very successful series of Institute meetings in our Province—something over one hundred meetings in all were held. Particular attention was devoted to poultry at these meetings, and very properly so, when one stops to consider the prices poultry commands at present.

I wish to concur with President Elderkin in all he has said touching the enthusiasm and assistance that came to this Fair from the Honourable Mr. Fisher and his efficient Department. The money the different Governments are giving to this Fair is certainly money well expended. The agricultural classes are receiving more attention at the hands of our Governments, for I know that I can now obtain grants from our Government for agricultural purposes much more readily than I could some years ago. The people are becoming more interested in the farmers, and the agricultural industry is fast becoming recognized as the supreme one in this country.

I know this Fair will be a success; it could not be otherwise. Allow me to again thank you for your kind welcome, and make room for the prominent gentlemen who are to follow.

HON. D. A. MACKINNON,

Lieutenant Governor of Prince Edward Island.

His Honour, in opening, said that he took it as a compliment to the little Province of the Gulf that he should be asked to formally open the Fifth Winter Fair. The success of the Fair is already beyond question, and he warmly congratulated the Stock Breeders' Association on their efforts in this respect.

As I understand it, this Fair is conducted by the Maritime Stock Breeders' Association, and the Provinces of Nova Scotia, New Brunswick, and Prince Edward Island. The Dominion Government has been particularly generous in financial help and sympathy. We on the Island are largely indebted to the Dominion Government for the great strides we have made in dairying, and in other kinds of farm work its assistance has been of a material kind.

The Father of Confederation, when drawing up the British North America Act, by good luck or good judgment, inserted a clause whereby the matter of agriculture was left under the joint jurisdiction of the Dominion and Provincial Governments. It was somewhat different with regard to education; and the Provincial politicians sometimes throw this matter on the Provinces, and sometimes the Provinces throw it back on the Dominion, as the case may be. The matter of immigration was left in somewhat the same condition as agriculture, and I would like to say here that I do not think sufficient attention is given to immigration by our Provincial Governments. In the Maritime Provinces there is plenty of room for the 1,000,000 people that comprise our population, and room for a considerable number of immigrants. Our fathers and our grandfathers settled these Provinces, and we want to see our country grow and prosper; we want our boys and girls to stay here and develop it. They can make as good a living here as in any other part of the world. If our people would become impressed with this, and would impress it upon their children, they would not be looking to the United States and foreign countries, and thinking that better livelihoods are to be gained there, and that they are better places to live in. Some of our people seem to think we are not a manufacturing people. That is a great mistake; this town of Amherst is an example of what can be done. We have vast resources of agriculture, lumber, mining, and fishing in these three Provinces awaiting to be further developed.

What is this Fair for? That is a practical question. I looked at the fat cattle, and I did not think they were the best in the world. There is an object worthy of any Association—to produce animals that will give the greatest returns in beef, milk or butter of any in the world. We are producing dairy products of an excellent quality. No better lamb can be produced anywhere than in these Provinces, particularly in Prince Edward Island. There is no place in the world where poultry can be produced better than here. If we produced these things in their highest excellence, the buyers of the world would come to us, and we would command an influence in the markets of the world.

I will not say anything further, except to declare this Fair duly open, and to quote:—

Lord, while for all mankind we pray of every clime and coast,
Oh, hear us for our native land, the land we love the most.
Our Father's sepulchres are here, and here our kindred dwell;
Our children, too, how should we love another land so well?
Oh guard our shores from every foe, with Peace our borders bless,
With prosperous times and cities crown, our fields with plenteousness.

HON. SYDNEY FISHER,

Minister of Agriculture

Mr. Chairman, Ladies, and Gentlemen,—

I have much pleasure in coming before you as the Father who introduced his lusty first-born into the Society where he has accomplished so much. I say the oldest, because from the result of the work of the Department over which I have had the honour to preside for nearly ten years, this fat stock show was the first we were able to encourage the growth of. In the history of Canada before this time there was a fat stock show at Guelph, in the great agricultural Province of Ontario, and it was doing excellent work among the farmers of that Province; and it struck me, as Minister in charge of the agricultural affairs, that the same thing could be done in the other Provinces of our great Dominion, and I saw no better place to start it, outside of the Province of

Ontario, than the Maritime Provinces. I knew you had a strong, vigorous, well-educated, and enterprising population, with fertile lands, and great opportunities for agricultural development; a population which, by reason of circumstances, had turned their attention in other directions—to fishing, to mining, to lumbering, rather than to agriculture. I am proud of the infant, I am glad to know its birth has been succeeded by years of vigorous growth. To-day the Fat Stock Show of Amherst is recognized all over the Dominion, and largely in the United States, as one of the great agricultural factors for improvement and progress in our land. His Honour the Lieutenant Governor pointed out that agriculture was such an important industry in Canada that both Dominion and Provincial Governments were charged with its care. It is true it was a wise thought on the part of the Fathers of Confederation, because all through Canada, notwithstanding our great industrial development, notwithstanding our great commercial progress, notwithstanding our great industries of fishing, mining, and lumbering, still Canada, from the Atlantic to the Pacific, is especially an agricultural country, and both Governments of the country have thought it their duty to care for that industry above all others. In doing that we think we are serving the best interests of every industry. You people in Amherst have an industrial town; you have your factories, your great works, the fame of which is known all ove rthe continent; the product of the machine shops of Amherst have gone to the farthest parts of the British Empire, and orders come even from far away India to this little town. All honour to the men who have spread the name of Amherst and Canada. The home market is the market that sustains the great industries of Canada, and the agricultural population is the greater part of that home market; and if at any time the agricultural population is rich and prosperous, and buying goods, then the industries of Canada must be rich and prosperous; and they are so to-day, chiefly on account of the prosperity of the farmers of Canada to-day. It is so largely with the fishing, mining, and lumbering as well; we have a great home market for all these products in the agricultural population of our Dominion. It is well, then, that the Government should care for agriculture; it is well that both Dominion and Provincial Governments should care for it. But we must be careful in our work on behalf of agriculture, that we do not overlap or duplicate the work of the Provincial Governments, and *vice versa.* There is a certain portion of the work that comes naturally under the control and care of the local authorities; work which they on the spot can do far better than can the central organization at Ottawa; work which is more or less of a local character, of an educational character, which is principally within the purview of the Provincial Governments. There is other work which is of a Dominion or national character, and that must be attended to by the Dominion or national Government. It is my duty as Minister of Agriculture, to look after the transportation of our agricultural products, to care for the trade and commerce in our agricultural products, and such like matters. It is also the work of the Dominion Department to try to direct local effort, to try to sympathize it by reason of our knowledge of what is going on in other parts of the Dominion Department to try to direct local effort, to try to systematize work being carried on there, it is only natural that I should desire to extend that work to other parts of the Dominion. And I have done a good deal of work along this line through Mr. Hodson, the Dominion Live Stock Commissioner, whose absence from this show I greatly regret, and of whose work in my Department let me show my appreciation by saying that I have been very fortunate in securing him, as I have been extremely fortunate in securing the services of so many enthusiastic and competent officers for the Department of Agriculture. Through Mr. Hodson's organization, we were able to start this Fat Stock Show at Amherst. I am glad the history of it has shown its justification. I want to congratulate the Maritime Stock Breeders' Association, and the farmers of the Maritime Provinces, as well as the town of Amherst, and the County of Cumberland, on the continued success and splendid progress which this Fair has made. Five years ago the Fair was held in a temporary structure, not particularly well suited for the purpose; to-day you have this magnificent structure, which has been put up by the enterprise and public spirt of the people of Amherst and Cumberland County, a structure which I do not think can be surpassed for the purpose for which it was intended. And here allow me to speak of one particular purpose for which this Fair was inaugurated, and that is the instructions and lectures which are given. A few years ago it was thought that an Agricultural Fair was merely the bringing together of a lot of exhibits for the purpose of awarding prizes, and the lucky ones received prizes, and the others did not. It was recognized in the construction of this building that there was another and greater purpose to be served, and that was the auditorium, with its ring for judging, and platform from which the addresses would be delivered; and I venture to say that that is the best part of this entire Fair. Some people were of the idea that the farmer does not require education, that he can simply do his work by intuition and rules of thumb; that he requires no business capacity; in fact that any fool can be a farmer; that it was a pity to keep a bright young man upon a farm when he might be doing something in the city as a merchant or professional man. I want to say to you here, ladies and gentlemen, that that idea is entirely explodedl in Canada, and it is being recognized that agriculture requires the keenest intellects and the greatest enterprise of our young people, and there is in that business in Canada to-day as great an opening for success, as great an opening for fame and reputation, as there is in any career in our country. Our agriculture is a complex business. Farming requires steady application and an infinity of knowledge. No matter how bright and intelligent, or how well educated, the young men and young women may be, they can find abundant scope for all their intelligence and education, for the greatest application, in the interests of farming in Canada to-day. The higher the education the better the application, the more distinct will be their success. I venture to say that farming is the best business in the Dominion of Canada to-day, and my reason for believing so is this If the same slipshod methods, the same disregard of business habits, the same rule of thumb practice, were carried out by people engaged in other business, disaster would quickly follow. A great many farmers are wedded to this slipshod way of doing things; they lack an intelligent interest, and in spite of all this the farmers of this country are doing fairly well. I am sorry to say, even with improvement in agricultural education, even with improvement in the instruction given, even with so many farmers' gatherings, there still remains room for much improvement, room for advancement. This is true throughout the length and breadth of our country. I have travelled the length and breadth of the Dominion. To-night I am near the coast of the Atlantic; a few weeks ago I was on the Pacific coast, and I have had opportunity of making a survey of the agriculture of the country. As I said a few minutes ago, everything in Canada depends upon the season's crops. To-day in all the great commercial centres the matter of Canada's wheat crop is anxiously speculated upon. Wheat to-day is one of the great staples of our country, but it is not the only one by any means, nor is it even the greatest one, because, as a matter of fact, wheat is not the most valuable production of this country. Let me say here what I said to a gathering of farmers at New Westminster, at the Dominion Exhibition, a few weeks ago. It has been my good fortune to travel a little, and I have always observed the agricultural condition of the country through which I was passing; I have had an opportunity of meeting and mixing with the farmers from a good many countries besides Canada. Let me venture to say this as the sum and substance of my observation, and in meeting and discussing these matters: Wherever you go, the people devoted to dairying, where dairying is thoroughly established, enjoy greater prosperity than do the people devoted to other branches of agriculture. I say this after the most careful consideration and study of the question; and I say it here to you as I said it a little while ago to the people in British Columbia, because I feel that wherever you find dairying on a permanent basis, the success of the community is assured. I do not wish to minimize beef production, the cultivation of the soil, and raising of wheat crops, which under certain circumstances, and for the time being, is more profitable than dairying; but in nine cases out of ten the country devoted to dairying is on a permanent basis of agricultural success, which no other branch of agricultural history can give. Now I believe here in the Maritime Provinces you have the dairy industry well established, and you have every opportunity for its advancement, as much so as any other part of the Dominion. I know in Nova Scotia many of you are more inclined to beef raising; you have excellent opportunities for sheep-raising, and I do not say for a moment that many of you cannot be thoroughly successful along these lines. I venture to say that in these Maritime Provinces dairying is the best means to adopt in your agricultural development, and with dairying naturally goes the raising of hogs and the production of bacon. With dairying also goes poultry, and also orcharding. These are the things most needed in these Maritime Provinces. These are the things you have already done a good deal in, and are doing a good deal in. You are doing a good deal in dairying, and have done a good deal. Prince Edward Island has been very successful with her dairies. This dairy work on the Island was inaugurated by the Dominion Department some years ago, and has been since carried on by the local authorities very successfully.

Let me say a word or two, before I stop, on what I saw during that trip I referred to a few minutes ago. The centre and eastern Provinces do not move along as rapidly as the West. Governor MacKinnon, a few minutes ago, spoke of the immigration policy which is filling up our great West. It is true a great many immigrants are turning their steps there. They will find there abundant opportunity, and, as a member of the Government, I am proud of the fact that today thousands and tens of thousands of the best blood of the British Isles and the United States is making its way to the West, and taking up homes in that country. During this season something like 165,000 people have come into Canada from outside Dominions to make their homes with us. Sixty-five thousand came from the British Isles, fifty thousand from the United States, leaving only some forty thousand of foreign birth. These people have come to Canada. Why? Because they believe in Canada there is an opportunity, a splendid opportunity, to improve their condition; and I was struck in passing through our great country at the great change that had taken place within the past two years. Two years ago, from the car window, I could see long stretches with absolutely no settlement; but as I went through a few weeks ago there was not one single minute in the whole of the journey when I did not see a dozen or more houses, and generally there were hundreds of houses within sight of the railway track. We in this older country can hardly realize what that means. The land which a few years ago was keeping a few stray cattle, at the rate of about twenty acres to sustain one, is to-day being cultivated, and is producing wheat at the rate of 30 to 35 bushels per acre, the same acre which was contributing about one-twentieth to the sustenance of a steer. You can realize very quickly what this means, from the old ranching days to the present state of cultivation. I am speaking not of the whole area of Saskatchewan, Manitoba, and Alberta, where thousands and tens of thousands of acres have been plowed, and where we have been growing winter wheat on land which a few years ago was thought unfit for cultivation and homesteading. In the Northern part of Ontario there is a growing dairy industry, where there are at present thirty-five creameries running successfully in a country which a few years ago was declared absolutely unfitted for stock-raising or stock-keeping. I was there this week, and I found it equal to the best cultivated parts of the old Province of Ontario. That is what these young Provinces are doing, what these new people are doing, to build up our common country, making Canada rich and prosperous, and a nation.

There is one thing I cannot but speak of to-night; we dealt on our lumber wealth, our agricultural wealth, our fishing wealth, and our mining wealth, our commerce, our industries; but there is one thing better than all that, and it is the national spirit, confidence, and pride in our country. That spirit is the greatest factor from the Atlantic to the Pacific in building up our country. I find that spirit everywhere; not only in the hearts of the Canadian people, but among the foreigners who have come amongst us. They cannot speak too loud in their praise of Canada, extoling its Government and laws. We have every right to be proud of Canada, every right to feel confident of the future of our country; and the more one travels through it, the more confident does he become. Wherever I went in the West, I met people from the Maritime Provinces, and I always found them prosperous and happy. It is pleasing to know that our people have turned their eyes from the great republic to the south of us; and while some, no doubt, will drift there, yet the greater number will remain with us in Canada under our flag. During the last few years 50,000 American citizens have come to Canada to make it their homes, and these Americans are loud in their praises of our country, and find it a better country than their own.

Ladies and gentlemen, I have been carried away to speak too long; I feel I have trespassed on your patience. I am extremely glad I have been able to come to the Maritime Provinces to meet you again. I am extremely glad to note the development here, and the success of this Fat Stock Show has justified the confidence we had, that the Provinces down here would develop more and more from year to year, as other parts of Canada are doing, in an agricultural way. It will impel us to do more for you, and I can assure you that work of this nature throughout the Dominion will always have the warmest support of my Department, and we will help you in every way possible. I feel that because you are strong here, you must allow me to devote a good deal of attention to the other and newer parts of the country. I intend doing everything I can for this Maritime Fair, but there are other parts to which we must turn our attention, and do what we have done, to some degree, for you here.

With these words let me take my leave and express my pleasure of the assurance of the continued success of this Fair, which I think is justified by the opening to-night at the hands of Lieutenant Governor MacKinnon.

Hon. J. W. Longley followed Lieutenant Governor MacKinnon, and dealt largely with the advisability of holding Provincial Exhibitions, as well as shows, of such a nature as the Amherst Fair. The history of the enlightened world shows that the countries that engage in the holding of exhibitions make progress, and the country that takes no part in such things stand still. That is the fact of the case, and the philosophy of it you can figure out for yourselves. Here in Canada the sections that are holding exhibitions are making progress, while the moss is accumulating on those that do not. He spoke of the progress agriculture had made in Nova Scotia during the past ten years, and predicted still greater progress in the years to come

Hon. Geo. H. Murray, Premier of Nova Scotia, had no particular message to deliver. He congratulated the people on having a thorough, practical man at the head of agricultural affairs in Canada. We are making great progress in agriculture in Canada. In the West one is struck with the optimism that everywhere prevails; they wish to impress on you that their country is the greatest in the world. If there is one weakness in the Maritime Provinces, it is that we do not appreciate the blessings we have at hand. We have here a great heritage, and a great people. So long as he was at the head of affairs in Nova Scotia, everything possible would be done to assist the farmers; no reasonable request would be denied.

Hon. James Stratton, ex-Provincial Secretary of Ontario, congratulated the people of the Maritime Provinces on the prosperity that was to be seen on every hand. Canada is indeed fortunate in having such a man as Sydney Fisher at the head of the Agricultural Department, a practical farmer, who knows the needs of the people he represents. Agricultural Colleges and Farmers' Institutes are doing much throughout the land for agriculture. He agreed with the Minister of Agriculture, that dairying was the basis of all true agricultural prosperity. If the farmers take the same interest in their occupation as men in other industries do in theirs, they will achieve the success which we all wish them to have.

SECOND DAY, December 5th.

HON. SYDNEY FISHER,

Minister of Agriculture.

Mr. Chairman, Ladies and Gentlemen,—

Before addressing myself to some thoughts which I have to lay before you in regard to agricultural matters, let me say a word or two on the subject which Brigadier Howell has been addressing you. The audience I have before me can hardly appreciate or understand the condition of affairs in the great cities of the old land in which the Salvation Army has been active. I thank God that in Canada there is no submerged class; you in Canada cannot appreciate or understand the utter misery of that unfortunate class. It is among that class that the Salvation Army is doing God's work in raising them from misery and hopelessness, and giving them an opportunity for a new life. General Booth and his associates have done noble work. "By their deeds ye shall know them." They are doing splendid work among these people steeped in misery and dejection. I am glad to know that the Salvation Army is taking up this work of immigration; I am glad to know that they are prepared to do this work for Canada, for the people in the old land—taking the people who have no chance, no opportunity, and bringing them to this land to start anew. It is true the great stream of immigration has been flowing into our North West, and at the same time there has been going on in the older Provinces a movement toward this same North West. The result is that farmers in Eastern Canada cannot get sufficient help to do their work, and it is to the interest of the farmers of this Eastern Canada that men and women should be brought here in large numbers to help us in our agricultural work. It is right and fit that an officer of the Salvation Army should come before the agricultural gathering and explain what the Army is going to do, and give you a slight sketch of their work.

I, myself, am a dairyman; I have devoted myself to dairying, and for years that has been my special business, and nothing has pleased me better than to go before a farming audience and discuss with them the details of dairy work, and the care of dairy cattle, and subjects of such nature. I am sorry to say that since I have been a Minister of the

Crown I have not been able to carry on that work; I am sorry to say my hand has lost its cunning, and I would not care to undertake the making of a batch of butter. I am sorry to say that the recent developments of dairy cattle, the recent improvements in dairying all through, are not too familiar to me now; I have been so engrossed with other work, and so much away from my farm, that I have not been able to keep up with the details of modern dairying, and I would not presume to give you an address on the details of dairy work. But I have had opportunity in plenty of studying the agricultural work of Canada, and perhaps it would not be out of place to say a few words to you farmers of the Maritime Provinces on some phases of our farm problems. We have just listened to an address on immigration. The immigrant who comes to this country, and wants to work on a farm, finds that during a certain season of the year farmers are very glad to get his help, and during another season of the year he does not want help, he wants to economize, to do the work himself, or with the aid of his family. Allow me to dwell on that point for a moment. There is some excuse for that sort of thing in the great Western sections, where the farmers are devoted to just one branch of farming, the raising of grain, and hardly anything else. That means that at a certain time the farmer, his family, and all the help he can get, must devote themselves to one particular thing, to get the seed in, and, later on in the season, to get the harvesting done, and the grain to the market. That is a kind of farming that is unknown and impossible in this section of Canada. Our farmers in Eastern Canada must of necessity devote themselves to a variety, to mixed farming, and we should so arrange our farm work that there will be a certain amount of it for every day in the year, and a fair amount of work to be done for a profit. I venture to say that the farmer in Eastern Canada who cannot employ a man the year round, writes himself down as a bad manager, and unfit to be the manager of a farm. The farmer should know how to employ labour so as to get a return of profit from that labour; and if there is any business or industry in Canada that offers a better opportunity of making money from labour than farming, I have yet to find it out. I want to say a few words about how we can do this. Farming in Eastern Canada must necessarily be farming dealing with live stock. That is to say we must keep live stock of a varied character on our farms, not only one line of live stock. It is very difficult to make one line of live stock profitable; it is possible, but not easy. What I mean by live stock farming is keeping a variety of live stock, which makes the work easier and more profitable. A man may keep nothing but dairy cows, or may keep nothing but beef steers, nothing but poultry, or sheep; but if a man was so to do in regard to any one or other of these various live stock classes, he would immediately handicap himself in his business. Because the different classes of stock will consume the various products of his farm to better advantage than if he has only one class to eat all it produces. Take the dairy industry, the milk is produced principally for the purpose of making butter and cheese, but the dairy cow must be utilized to the best advantage if the making of butter and cheese is to be carried to the highest point of profit. So, also, with the poultry. I venture to say you can raise poultry better if you have the dairy industry back of it, and can do it better also if you have an orchard on the farm. A man who has a large orchard can make more profit from it if he has animals on the farm to produce manure to enrich the orchard. I know that a good many people here in Nova Scotia can make a good living from their orchards, and be obliged to work but a few months of the year, and they will not take the trouble to keep stock for the little extra profit they could make; and I have been told also they won't take the trouble to keep pigs or chickens. I have been informed, also, that a large portion of the profit of some of these orchards has to be expended for commercial fertilizers to keep their orchards up, whereas they should be keeping stock, which would keep the orchards up, and return a profit. Our small farms here in Eastern Canada must necessarily be devoted to a lot of different work. Let me say one other thing in this respect: The man who is devoting his attention altogether to one branch of farming is not as good a citzien as the one who is devoting his energies to different lines, and has a variety of interests. The man devoting himself to different lines has a variety of experience, and a larger and keener intellect than the man engaged in one line exclusively. Let me say another thing in connection with farming here n the Eastern Provinces, and I include in this the Provinces of Quebec and Ontario: Our land here is fertile, but at the same time we know that if it is constantly cropped without a return of the proper fertilizers, it will become exhausted. I believe this is also true of the Western Provinces; I believe these Provinces, which are reputed to be of inexhaustible fertility, will some day, in the not very remote future, from constant cropping, from continued wheat growing, become exhausted. There is no doubt about the fact that our lands need fertility, and in Canada I believe there is no better way of returning fertility to the soil than by barnyard manure, by keeping stock upon the farm. I know in saying this some of the agents of commercial fertilizers will think I am speaking rather strongly. I know some people who think they can keep up the fertility of the farm by artificial fertilizers will take issue with me, and I am prepared to say that under certain rare circumstances artificial fertilizers may be used to advantage; but I say that the cheapest, and, in the long run, the best, fertilizer for the farms of Canada is barnyard manure. For this reason our farms here must be live stock farms.

I want to say another word about the Maritime Provinces. In these Provinces, and in Ontario and Quebec, it is a little difficult to raise enough grain, enough concentrated food, to give the cattle a proper balanced ration. I appreciate that. Now you must find a way to feed your stock so as to avoid the necessity of using large quantities of concentrated food. I say large quantities. I do not say you must not use any; I am satisfied you will have to use some. I venture to say, however, there are methods of cropping your land by which you can avoid, to a very considerable extent, the necessity of purchasing this food to such a large extent. You have here the opportunity and capacity of raising as heavy root crops as can be raised in any part of Canada, and this splendid root crop which you can grow so well, when used judiciously, will obviate, to a large extent, the necessity of purchasing quantities of concentrated food. You can fatten animals on roots, with ordinary hay; you can produce hogs with roots, and with a small quantity of grain. You are able to grow good crops of clover all through these Maritime Provinces, as well as other leguminous plants which have the same qualities for feeding purposes as clover. And if you can raise good crops of clover, and can make good clover hay, and feed your animals upon that to a large extent, you do not have to use very much grain food for your animals to give you a balanced ration, not as much as when you make your hay from timothy, and other grasses of that nature. I know that you are very partial to timothy hay here. Timothy hay is all very well if you are going to sell it in the United States market; if you are going to ship your hay, you cannot ship anything to better advantage to the markets of New England. But I venture to say that timothy hay is very poor stuff alongside clover hay for feeding.

That brings me to something else. I have been enquiring a little, and I have had a report of your markets before me, and I find there is a good, fair opportunity for marketing the minor products of your farms at good prices. You have a good market for butter, bacon, and pork; you seem to have a good market for beef, poultry, and dairy products. With these things, and with the market you have, I do not see why the farmers of Eastern Canada cannot make a good living, and make a profit as well from their farms. A voice—" We do." Mr. Fisher: I am glad to hear that you do. Sometimes I meet a man who says it is impossible to farm profitably in these Maritime Provinces. As an excuse for moving to the United States, or Western Canada, a man will sometimes tell me they have not opportunity of successful and profitable farming in Eastern Provinces. I believe you can do as well here as anywhere, and the ones who go away are those who fail to take advantage of the opportunities which are all around the farmers in these Provinces by the Sea. I went to a pork packing establishment in Amherst this morning, and I saw some hogs there, which they told me had come from Prince Edward Island. They cannot get enough hogs here to keep that establishment going, and it is not a very large establishment, either. The farmers of this locality cannot produce enough hogs to keep a small establishment running. Do the farmers not know how to raise hogs? The prices offered are sufficient to give the farmer a fair profit; the farmer who knows how, can produce hogs for that factory, and reap a profit of 25 to 50 per cent. on his investment. That is, he is able to sell the pork for one-half more than it cost him to make it; and will say to the farmers that the manufacturing people, the industrial classes in Canada, who are able to make 50 per cent. on their investment, were doing what would be beyond the dreams of their imagination; but to-day in Canada there are thousands of farmers who refuse to make pork, although they can sell that pork at an advance of 25 to 50 per cent on the cost of production. I noted the carcasses of the hogs that were at your establishment. The man who raised those carcasses did not do so at a profit, they were too heavy. They might answer all right for the lumber woods, but for the packing house they were far too heavy. They weighed over 200 pounds; and when you bring a hog beyond 200 pounds, you are throwing away money, for every pound beyond that mark costs a great deal more than the pounds below it. The farmer who brings his hogs up to 300 pounds is not making any money; and by the time the animal reaches 400 pounds, you have probably lost all the money you would have made had you sold him at 200 pounds. I am speaking in round figures, but we have the detailed figures as a result of many careful experiments carried on at the Experimental Farms, and which you will find published in our Bulletins. It is idle for the farmers to say they do not believe such to be the case, to say it is not correct. I have known some practical farmers who said they have tried it, but it did not pay. They did not weigh every ounce that was fed to the animals; they did not try two or three dozen kinds of feed. The result of the multitude of exact experiments is that a man selling pork weighing over 200 pounds per carcass is wasting his energies, his feed, and is dissipating the profit the hog had already made him.

Now let me say a word or two in regard to the general question of the pork and bacon industry in Canada. I think this is one of the most important questions that the farmers of Eastern Canada can turn their attention to. At this moment in Canada there are some fifteen large pork packing establishments; some ten years ago there were only three or four. Ten years ago the production of first-class bacon was entirely unknown in Canada. About ten years ago we exported to Great Britain about $600,000 of bacons and hams. Last year we exported about $15,000,000 worth of these commodities. I do not know of any manufacturing industry in Canada that has made such phenominal advance as has our bacon trade. What has been the result? We have increased the number of our pork packing establishments, and to-day the farmers cannot produce enough hogs to keep the establishments supplied, notwithstanding the fact that bacon last year reached abnormally high prices. In Ontario and Quebec, the price of live hogs at the station is six cents per pound. I do not know whether you get such a price down here or not, but the prices paid here at your pork packing establishment is good enough to encourage the farmer to go into hog raising. Notwithstanding these prices, the farmers of Canada have lagged behind, and to-day we are not producing enough hogs to keep our factories running. I say that such a state of affairs is a shame and a disgrace to the farmers of Canada. There has been no greater development in the history of Canada than the bacon industry, and the farmers cannot make larger profits anywhere; and while the factories have increased their plants, and are exerting themselves to their utmost, the farmers will not produce sufficient hogs to keep them busy.

In connection with your dairies down here, where you have splendid chances for growing roots and clover, you have a splendid opportunity of profitably raising hogs, and I am sure if you do it you will get these two results: In the first place, a splendid profit, more than you can make in any other branch of farm industry. Secondly, you will have a large amount of splendid manure with which to maintain the fertility of your fields, and is perhaps better than any manure you could put upon them.

I spoke to you last night about the dairying industry. Wherever I travelled I found the permanent basis of agricultural prosperity was due to dairying. I found that everywhere, I do not wish to discourage or minimize in any way the keeping of beef cattle, of sheep, or any other branch of farming, but I found wherever the dairy industry is well established, and carried on in a proper business, co-operative basis, as it is in Canada, there you find permanent and most satisfactory agricultural prosperity. I am not going into the reasons for this, or into the details; I make the statement, and I leave it with you. The necessary adjunct of the dairy business is hog production, and here in the Maritime Provinces you should carry on that business to a considerable extent.

I will not detain you longer; I have been tempted to speak to you a little in detail as farmer to farmer. You can follow up the hints I have dropped to-night by securing our Experimental Farm reports, and you will also hear a good deal from the lips of the men who are sent to speak at your Institute meetings. These men are experts; they are trained especially for this work. The statements they make are entirely worthy of trust. You pay for these men's services, and if you want to get a return for the money you pay as taxes to support them, you must follow up the advice they give; you must take to heart what they say, and put i tinto practice, otherwise you are wasting your money. Their work is wasted, their efforts are wasted; it is only by accepting what they give you, and appling it to your own particular case, that you can reap the benefit of this expenditure. I know how difficult it was for me, in my younger years, to find out these things which to-day are at the beck and call of every one of you. The Government did not do work of that nature in those days, and we had to do it for ourselves.

We had not the means, or appliances, or training, or knowledge to do it perfectly; to-day the farmers have all this done for them, and all they have to do is to apply the information to their own particular case and carry on the work.

Our agricultural conditions should improve all the time. In Canada to-day great agricultural progress is being made. I am indeed proud of it, but at the same time I appreciate and understand perhaps more than most of you do how much more might be done, and I always try to incite the farmers to show how well they can excel themselves, and, taking advantage of their opportunities, show the world they are the best farmers in the world, as I believe they are.

TUESDAY EVENING, December 5th.

BRIGADIER HOWELL, SALVATION ARMY.

Mr. Chairman, Ladies, and Gentlemen,—

I have been asked to make a short address on the immigration work of the Salvation Army, especially in connection with that side of it which touches the domestic affairs, and I am sure in that side of affairs the ladies are interested.

Some three or four years ago the Salvation Army in the Old Land started to assist some worthy people to come to Canada, with the result that these people began to correspond with their friends at home, and the Army found itself in receipt of all kinds of applications for assistance, and it had to open up a regular bureau of information in connection with the work. Last year, after reserving all the accommodation we possibly could in the various lines of steamers, we were obliged to charter a steamer outright, the "Vancouver," to carry our proteges to Canada. During the last two years we have been instrumenatl in bringing to Canada five thousand people in all.

The difference between the Salvation Army immigration and other societies is this: First, we make a very careful selection on the other side of the Atlantic; and secondly, we are very careful in distributing the people when they arrive on this side. When we first commenced this work, our Canadian friends were very much afraid we were going to bring in a lot of undesirable people, slummers, into Canada. That was the first objection we had to meet. We had not been working very long when a cry arose in the Old Country that the Salvation Army was taking the best blood and the best muscle of the population. So while we had one objection on this side, we also had an objection on the other. Let me explain that the policy of the Salvation Army in dealing with the submerged class, as constituted in the Old Country, touching immigration, is to help only such people to come to Canada who are able and willing to work; only such people as this should be assisted to come to this country. So in dealing with these slummers, or submerged class, we are very particular in our selection of who we shall assist to come to Canada. Last year we had something like 60,000 applications from people wishing to come to our country, and out of this number only some 4,000 were accepted, and 1,000 the year before. Applications from people who want to come out next season total about 70,000. We shall have to charter not one, but three ships, in order to bring these people out in time for the spring work; it would be doing but little service to the farmers to bring men out after the season's work is all done. We must get the men here early, and in order to do so, we find it necessary to reserve all the accommodation available on the regular line of steamers; but, in addition, we shall charter three special steamers, one to land at St. John, the other at Halifax, while the third will go to Quebec or Montreal.

There is one thing I would like to call your attention to. General Booth, at the present moment, as you know, has the ear of the Old Country, that is, the great mass of the people listen very largely to what the old gentleman has to say. It is a very wonderful thing that any one man would realize in his lifetime such results as has been allowed General Booth, and when he speaks, he has the ear of the people, especially the working classes. When the General says it is the best thing for a man to come to Canada, that man thinks very seriously upon that particular matter. Now we find ourselves involved in a very serious problem. There are thousands of people in the Old Country who are in fair circumstances, yet are at the same time on the verge of the submerged class; it only takes some depression or something of that nature to drop them down into the place where they are submerged. Why is the Salvation Army interested in immigration work? Simply because we can assist a class of worthy people, and help them to be better; we can help humanity by taking these people and putting them upon their feet, and giving them a chance, giving them the means to work and get along. I think we are doing God's work in assisting these people. And let me tell you that in the five thousand people the Salvation Army were instrumental in placing in Canada, we have only heard of five or six failures. Dr. Bruce, of the Interior Department, wrote me about a case he had to deal with. I replied to the Doctor that we had brought this man from the Old Country on a certain date, and we would return him because he was not worthy. I said to the Doctor that I would like him to remember that the Salvation Army had brought five thousand pepole to Canada during the past two years, and while the Government has to return thousands of undesirable immigrants every year, yet only three people had to be deported by the Salvation Army. We are not bringing to this land people from the submerged class, but men and women who should have a chance, and are worthy of a chance.

I found in the Old Country that the great West was very well known, while these Eastern Provinces were but little known. I think I know something of the Provinces of Nova Scotia and New Brunswick. I told the President of this Association, when he asked me if I knew anything of them, that I had spent fourteen years of my life labouring in them. I was quite startled to know how little these Provinces were known in the Old Land. It is a great mistake to think you can go to Halifax or St. John and persuade people to come off the ships and change their destination. That has to be done on the other side; their destination has to be fixed before they leave the Old Land. The Salvation Army immigrants are met by our own officers; we have central bureaus of information up and down the country. A man is met at Halifax or St. John, his transportation is issued to him, along with a letter of introduction to the farmer to whom he is going, and he is met at this particular point and introduced to the farmer or mechanic wherever he goes. We are particularly interested in bringing out farm help. I sing one song from morning to night, and that is that the basis of all true wealth is in the land. An immigrant cannot become a good Canadian quicker than by becoming a farmer; he can be a better Canadian on the farm than he can in the cities. City life is the same here as in many other countries, and a man can appreciate Canadian life and Canadian climate to the fullest on the farm, and nowhere else. The United States brings immigrants into their cities, and the crowded condition in some of their cities is truly dreadful; our Canadian Government is to be commended for bringing the people to place upon the land, and for giving no bonus to any person, company, or organization, except for the one purpose of bringing people right on the land.

By writing the Salvation Army headquarters, St. John, N. B., you will be able to receive application, which you can fill in when desiring farm help. We shall then be glad to correspond with our representatives in London and other points in the Old Country with reference to bringing immigrants to this Province.

There is one note I wish to sound. The farmers of this country are just as capable as the farmers of any other place, and I think they should so manage to spread their work so that they could keep a man the entire year. A young farmer said to me to-night: "I want a married man; if I can get the man I want, I will build him a house and hire him the year round." I said that such was the argument I was making all over the country. If you want a good man, get a married man, one that is not always wanting to move somewhere. Hire him for the season, and look after his comfort. The farmers do not, in many cases, look carefully enough after the comfort of their help; any kind of food is good enough for the help; any place good enough for them to sleep in. They will not use them properly, and then they wonder why they cannot obtain farm help. If you want satisfactory help, you must arrange matters; if one thing won't succeed, try another. If one department of farming won't allow you keep the man all the year, go into something additional. No man can hope to pay small wages and have a good man. General Booth has said we could take 250,000 a year from Great Britain and not affect the labour market there. An article in a Toronto paper states that Mr. Preston believes the same to be true, so you can see what a field we have to work on, and the Salvation Army promises to be the greatest immigration agency in the whole of Great Britain.

We are now turning our attention to the Scandanavian side of the work. Everybody knows that Norwegians, Sweedes and Danes are in great demand for domestic help: this class of girls make excellent domestics. I do not want to say very much on this point, because I know I could leave this building with pockets bulging with applications, and I am not prepared just at present for such matters.

TUESDAY, December 5th.

DRAFT HORSES, THEIR CARE AND MANAGEMENT.

DR. HENRY READ, GEORGETOWN, ONTARIO.

I have no doubt there are farmers in this audience who have tried horse raising, and who have come to the conclusion that it cannot be done with a profit; but these people did not go about it in the right way. In order that a draft horse may make a profit for the man that breeds him, two things are necessary: It is to be bred right; and, after that, it has to be fed right. These are the two questions I am going to discuss. As to the breeding of these animals. You all know there are certain breeds of horses known as draft horses. I am not going to advocate any particular breed to-night, but merely to speak of the types. The man who is going to make a success of draft horses must give his attention to one particular breed. In breeding, you must pay attention to certain natural laws, which are very arbitrary. There is nothing new in this; every farmer knows about these natural laws, but, unfortunately, too many act as though they had never heard of them. The law of hereditary is a thousand years old, that is, in other words, like will produce like. I have no doubt that every man in the audience will admit the working of this law, so far as the outward appearance is concerned. That goes without saying. There are a great many other ways in which the law of hereditary acts, altogether aside from the matter of conformation. We find queer characteristics are transmitted from parent to child; in other words, take some of the most highly developed breeds of animals known in Great Britain, and they were not always as fine as they are now. Their ancestors of a hundred years ago were very inferior to these animals, and the high qualities and desirable characteristics that were developed through favourable climatic conditions and the best kind of feeding. These animals became well-grown animals, and that was largely the result of the food given them. Now the characteristics have become fixed, and will be transmitted to their progeny. The converse is equally true. Buy an animal and subject it to poor treatment, to poor feeding, and it will soon loose some of the desirable characteristics, and will loose something else as well. He will loose the power to transmit the desirable characteristics to his progeny. So if you purchase a high-class animal, it is absolutely imperative that he should be well fed and well groomed, so that he may not only retain his natural superiority, but will be able to transmit the characteristics that he inherited. There are a great many ways of looking at this law of hereditary. You must remember that disease is hereditary. Take, for instance, spavin, ring bone, roaring, these are well known to be such diseases, and are transmitted, generation after generation. It might strike some people as strange if I were to say that even queer habits are transmitted from parent to child. That can be well illustrated by looking at the different breeds of dogs. The fox hound's instincts are fixed, so is the collie's. These two breeds sprang from a common ancestor; and there is no doubt that the characteristics of these animals are derived from a long line of ancestors. There is another point that comes in under this law—length of life. There are certain breeds of horses that are known to live twenty-five or thirty years, and be useful, while others will be useless at twenty. Everybody knows of human families,, the members of which live to be seventy or eighty, while the members of the family living across the street will die one after the other at sixty or seventy. These long-lived people have inherited some vital principles which enables them to resist the ravages of time to a great extent. We cannot explain it; but we know that long life is hereditary. So if a man wishes to be successful as a breeder of horses, he must see to it that the animals from which he breeds have all the properties which I have described. The man who disregards this law is doomed to become a failure as a breeder of live stock.

We hear a good deal about the value of a pedigree; but, after all, that pedigree does not amount to much unless it traces back to some illustrious ancestors, to some noted stock; then a pedigree is valuable. There is a law in nature which we call the law of reversion. Some peculiarity of animal life will skip three or four generations, and will crop out four or five generations from where you last saw it. The pedigree comes in just here. If we are using an animal that is descendent from a long line of illustrious ancestors, we know there are no undesirable principles in connection with his ancestors to which he could hark back. When I was a boy, the old native stock of the country was a sort of brindle, and some farmer introduced Shorthorn blood. In after years, when we thought this strain had been eliminated, a calf would put in an appearance with the old characteristics. This law of reversion is acting, and we cannot be too careful in looking after the pedigrees of our breeding animals. The farmer is justified in using the very best breeding mare at his disposal; and the farmer who is using anything but a pure-bred sire is certainly making a great mistake, and is almost sure to meet with failure in his breeding enterprise.

A great many farmers have made a failure in breeding draft horses, because they have not confined themselves to one particular breed. If you start off with an ordinary brood mare, you want to grade up as fast as you can. There are farmers who started breeding twenty years ago that to-day cannot produce a horse with two crosses of any one breed, simply because they have been mixing the breeds; and I tell you no good result can ever come from that kind of breeding. I stake my reputation on the fact, you cannot cross two pure-breeds of horses with good results; the man who crosses two breeds is doing worse for himself than if he started with no breed at all.

I want to say a few words about feeding these animals. After you have bred right, feed right. The men who talked to you about beef, told you to take the calf from the dam and keep it in high condition till it went to the butcher. The same thing applies to the horse. The man who allows his young horses to run down in the winter for lack of care and feed, is certainly going to lose money. Keep them in good condition from the start, and right straight along; never turn them out in the spring poor. In certain sections of the country the farmers pride themselves on exposing the colts, and feeding poor during the winter months. They say it hardens them, and when they come out in the spring they will be tough and hardy. Now I would not dare to stand up here and say no good horses had ever been raised in that way, because I know that thousands have; but they were not good horses because of such treatment. No, they were good in spite of it, and they would have been better if well treated. It is not good to allow the little colts, after being deprived of their mothers, to run around in the pastures in October and November. A foal should be taught to eat grain and meal before being deprived of its dam. It should be well housed and looked after. Then it will become a plump, hardy little creature, and will come out in the spring prepared to make good progress during the summer. Feed the colts well from the time they are born until they go to market. It is not necessary to keep colts in high condition; as long as they are in good condition, it is all that is necessary. If the farmer offers a heavy draft horse for sale, and that horse is not fat, he is selling at a loss. In Chicago market to-day, they claim that horseflesh is worth twenty-five cents per pound. The man who breeds steers will tell you that beef can be produced at five cents or six cents per pound. So surely it will pay you to have the horses fat, if live weight is worth twenty-five cents per pound in Chicago market.

Allow me to mention some of the diseases to which draft horses are subject. Phlegmassia, some people call it "Milk Leg," but you will all recognize it when you see it—a big, unsightly leg, usually behind, occasionally before. That is a Dolens disease, and the heavy horse is more subject to it than the lighter ones. It greatly depreciates from the value and appearance of the animal, and, as a rule, it is a disease that need not be present, because a careful feeder is not liable to be troubled with this disease. In the Old Country, this disease is known as "Monday Morning Fever," so it must have some connection with a day of rest. A horse performing heavy work must be well fed in order that heat and energy may be produced, and the horse will be able to do the heavy work it is called upon to perform. Sunday comes around, he is fed the same amount of food, the same heat and energy is produced, with no way of escape. The horse is doing nothing with that pentup energy which is in its system. There is a set of glands called the lympathic glands, whose function it is to absorb that excess of heat and dispose of it in a way that is harmless. The largest group of these glands is situated just about the thigh; and when more work is forced on them than they can attend to, they refuse to act at all, and this heat and energy is thrown back, with the result that the whole hind quarter becomes inflamed, and the leg swells, and you have it. Had the horse been given a little exercise, or had his food been reduced, he would not have contracted the disease. If the heavy horse cannot be exercised, his food should be reduced to a certain extent for that day.

Another disease that heavy horses are subject to is acute indigestion. I do not mean to say that draft horses suffer from this more than light horses, but it will affect the draft horses more seriously. It is caused by a sudden change of food, or an excessive quantity. I find more cases of it in winter than in summer, and more with farmers than with anybody else. The farmer drives in and tells me a story something like this: "My horse has not been doing very much for a time; has not been getting very much grain. I thought I would have to drive ten or fifteen miles to market, so I got up a little earlier and gave my horse about twice as much oats, because he had a hard day's work ahead of him." That speaks well for the farmer's heart; but such treatment has cost the life of many a valuable horse. It is bad practice; you should never do it. Never give the horse extra meal because he is going to do a hard day's work. The horse's stomach has become inured to a certain amount of work. The animal may appear to be plump and well, and yet he is not always in good condition, being, perhaps, flabby and soft. That horse begins his work. Soon his muscular system will tire, and all the other systems will tire in sympathy; the stomach gives way, and the process of digestion ceases. As soon as this process ceases, a chemical process sets in, the food will become sour, gases will be thrown up, the horse will break into a sweat, and you have a case of acute indigestion. If that horse had been given his ordinary breakfast, the farmer might have driven into town with a tired horse, but there would be no indigestion, because there would be no food in his stomach. Supposing your horse brings you home all right, and is not sick, but very tired, do not give him a particularly big supper; make it rather lighter than usual. Groom him down, and you will find that horse on his feet and ready for his breakfast. It is much the same with the human system; a tired man should never eat a heavy meal; it is harmful.

I thank you for your kind attention. This is a magnificent audience; I have never seen anything like it at Guelph, and I have attended that show every year.

WEDNESDAY EVENING, December 6th.

LESSONS TO BE LEARNED IN LIVE STOCK MANAGEMENT FROM BRITISH PRACTICE.

M. CUMMING, PRINCIPAL OF COLLEGE OF AGRICULTURE, TRURO.

During the past year I have had an opportunity of meeting a large number of farmers in various parts of the Maritime Provinces, and I have found that there seems to prevail among our men an idea that our stock in Nova Scotia, New Brunswick and Prince Edward Island, is decidedly inferior to stock in other parts of the world; and many seem to think that almost every imported animal coming from the Upper Provinces, or the Old Country, is necessarily superior to those that are bred in our midst. In a measure, this idea is true; but, at the same time, I have had my attention called to instances where Agricultural Societies and private individuals have sent away for pure bred animals, and have received, at a higher price, stock that was quite inferior to that which they might have obtained from Provincial breeders. I find that our men usually acquire this idea of the enormous superiority of stock bred at a distance, as compared with stock bred at home, from newspaper and magazine articles, as well as from public utterances, in which the tendency usually is to present mateers in their most rosy aspect, and thus to overlook the large number of indifferent animals that are to be found, even in the best breeding sections in the world. It is on account of this very fact that I hesitated a little before agreeing to give this talk upon British live-stock. For while it is true that Britain has produced, and probably will for a long time yet, produce a larger proportion of high class animals than any other country in the world, yet there are many farmers, even in this famed district, who are producing what either you or I would term rather poor animals. It, moreover, is the tendency of the average traveller to be carried away by what is good, and to overlook the more ordinary aspects. I, personally, believe in the Maritime Provinces. I believe that they have a great future before them; and I hope that my hearers will understand that this speech is not given with a view to vaunting other countries at the expense of our own, but rather with a view to presenting some of the best aspects of one of the oldest farming communities in the world, as affording an example which we might copy a little closer.

The British Isles are known the world over as the home of more of the great breeds of live stock than any other country on the face of the globe. The traveller who lands at Liverpool, and makes his way across the English country, is so carried away with its beauty that he is readily prepared to believe this. As he is carried by the locomotive past the beautifully cultivated fields, dotted all over with wide-spreading oaks and stately elms, and divided in every direction by endless lines of green hedges, with here and there rose and ivy-covered cottages, he gets impressions of rural beauty so enchanting as to almost appear unreal. He is prepared to believe almost anything that is stated in regard to the products of the country, and is not at all surprised that so many of the world's great breeds of stock have had their birth in this enchanting country. But yet, not all of Britain's Isle presents this luxurious appearance, for the traveller has only to go northwards in Scotland to see a country where the conditions are very different. The traveller in Aberdeenshire, for instance, sees no more those endless lines of hedges. Instead of the oak and the elm, he sees the pine and the fir tree. The areas of cultivated land are very much less, and the country itself is exposed, for a greater portion of the year, to the chill east winds from the Northern Sea. And yet, even here, one finds representatives of English pure bred cattle, more especially the Shorthorn, that have attained a degree of perfection beyond that attained by any of their ancesters in the more favoured country in the South. More than that; one hundred years ago Aberdeenshire was scarcely known to the outside world, except for its granite, and the fish which were brought from the sea. To-day it is known as a country where agriculture flourishes, and where the prime beef of the world is produced. The transition in this country, which naturally seems ill-adapted to agriculture, has been, in a large measure, due to its great live stock breeders, who have improved their lands with the aid of Shorthorn and Aberdeen-Angus cattle. Thus originating, as they have, in the very lap of luxury, the English live-stock breeds have given evidence of an inherent excellency, which enabled them to triumph over adverse circumstances, and which has enabled them to improve, in the highest degree, the agricultural prosperity of the country in which they were bred and fed.

The future of these Maritime Provinces, so far as agriculture is concerned, lies, I believe, in the very same way, largely in the hands of our live-stock breeders and feeders. Successful farmers the world over have learned that the greatest success in farming is achieved through marketing the products of the farm in their highest possible manufactured form. Beef, butter, cheese, hogs, poultry, and horses will pay better, even if no more actual revenue is derived, than hay, oats, wheat, and barley. For, in the latter case, all the fertility is being sold off the farm, whereas, in the former case, the farmer has his barnyard manure with which to maintain the fertility of the fields. Even in Western Canada, the truth of this statement is gradually becoming to be realized, for in many of the older sections, especially in Manitoba, farmers who raised little but wheat have gradually exhausted the fertility of their fields, and are now purchasing live stock in large numbers, and are gradually adopting a system of general farming. Our own best farmers are thoroughly alive to the importance of live stock, and it only remains for us to work out this policy of increasing and improving our stock to bring these Maritime Provinces to a very high standard of excellence.

Scotchmen and Englishmen are naturally stock-men. Not only the farmers, but the clergymen and professional men, take a large interest in good live stock. It is generally conceded that the best judge of Galloway cattle in England is the ex-Moderator of the General Assembly of the Scottish Church, Rev. Dr. Gillespie. And instances might be multiplied indefinitely of men in similar positions, who, either directly or indirectly, manifest great interest in the stock breeding art. But one need not continue to specify individual names when such an outstanding example as that of our much respected Sovereign, King Edward himself, manifests such great interest in this art. King Edward breeds and shows at the Live Stock Exhibitions of the country the very highest quality of Shorthorns, Herefords, and Aberdeen-Angus cattle, Southdown Sheep, and Shire, Clyde, and Thoroughbred Horses. I watched him last summer, as he carefully inspected the various live stock exhibits at the Royal Agricultural Society Show, on which occasion he shook hands with a number of the breeders of first prize animals. I doubt if the Agricultural Exhibitions, of which an unusually large number are held in the Old Country, have accomplished any greater end than this, namely: The affording of an opportunity for the producer and consumer of farm products, for the farmer and stockman, and the professional man, to meet and confer on matters of common interest, thus establishing an intimate interest between the various classes which has done much to elevate and improve agricultural conditions in the Old Land. This is an aspect of our Maritime Winter Fair, the value of which cannot be estimated in dollars and cents just at present, but which will ultimately lead to a much more universal appreciation of the stock-breeders' art, and thus to an improvement of our agricultural conditions in the East.

Although a large number of breeds have originated in Britain, yet there is no cuontry where you will find less cross breeding and mixing up of breeds. The Scotchman clings to his Clydesdale horse, and the fame of it goes throughout the world. The Ayershireman clings to his Ayershire cattle, and refuses to be carried away by any stories of excellency in other breeds. In Jersey and Guernsey, almost a hundred years have elapsed since a single live animal of the cattle-kine has landed on their shores, and, as a result, the breeds are kept absolutely pure. Here lies one of the greatest secrets of success in the breeding of live stock, and one which our Eastern farmers must learn, if they ever expect to accomplish great things in animal husbandry. If some one would give me a receipt for inducing every farmer in Nova Scotia to select his favourite breed, and stick to that breed through thick and thin, I would guarantee, through the using of it, to double the value of our agricultural industry within the next quarter century.

The British Isles are noted for their large flocks of sheep, and shrewd farmers over there are fully alive to the fact that no animal pays better, in proportion to the labour demanded in looking after it, than the sheep of "the golden hoof." Some countries are better adapted to sheep than others; but it has always seemed to me that the Maritime Provinces, with their good grass, humid climate, and large runs of well-watered pasture, are especially adapted to the raising of sheep. Dogs and barbed-wire fences have militated rather strongly against this industry heretofore; but in other countries, where sheep-breeding flourishes, dogs are just as numerous, and I, personally, have no sympathy with the "penny-wise and pound-foolish" use of barbed-wire fences. It behooves well for our country that this year our flock masters report the demand for sheep of all kinds to be far in excess of the supply. Those who had sheep last year made money out of them, for not only is wool double the price it was three years ago, but lamb and mutton is proportionately high. Present conditions, moreover, bid fair to continue, and as the exhibition of sheep given at this Show clearly proves that sheep of the very highest quality can be raised in our Provinces, let us hope that our farmers will take a new interest in the sheep, and will give it the place it deserves, as a money maker, on our farms by the sea.

The question of scarcity of labour, and the means of ameliorating it, in these Provinces, was pretty thoroughly discussed at the meeting last night. This problem is becoming more and more an equally live one in the Old Country. As a result, statistics show that every year less land is being ploughed, and more land is being out into permanent pasture, in order to minimize the amount of manual labour to be done on the farm. Permanent pastures enter largely into the farm practice of most of our Eastern farmers, and from what I have observed, I must say that the English people can teach us much in regard to them. I have, in many cases, known farmers to have either not seeded lands intended for pastures at all, or to have confined themselves largely to the use of timothy alone, as a pasture grass. The lesson of the Old Country pastures is to thoroughly prepare land intended for permanent pasture, and to seed them down with a mixture of grasses, in which meadow fescue, tall oat grass, orchard grass, are mixed with timothy and clover to give the best results. When a pasture is seeded down with a mixture of the grasses referred to, and care is taken in not allowing these pastures to be trodden upon too early in the spring, nor to be over-cropped during the first two or three years, results may be expected which will enable our farmers to carry a very much larger number of cattle on the same acerage of ground, and to feed them better.

The value of roots as a cheap and healthful food for live stock, is very prominently impressed upon the mind of anyone who studies Old Country feeding methods. I visited, last summer, the home of that greatest of all breeders of Shorthorn cattle, Wm. Duthie, of Collynie, Aberdeenshire, Scotland, and found that on his four hundred acre farm, sixty-five acres are devoted to roots; and his cattle, that are known to be the very aristocrats of the cattle kingdom, are fed in the winter time on little else than straw and trurnips. The humid conditions of the Old Country adapts the farms there to the production of a large yield of roots. The same conditions prevail in the Maritime Provinces.

During the time that I was at Guelph, I do not remember of their being a larger yield than eight hundred bushels of turnips per acre. At the Government Farm, at Truro, under the managership of Mr. Fuller, the yield is seldom under one thousand bushels per acre. 'Tis true that scarcity of labour has militated some against the growing of this crop extensively, but I have no hesitation in saying that, where grain is relatively dear, as it is with us, there is no crop that will pay better, and no feed that will keep our cattle in a more healthy condition.

One might continue almost indefinitely to refer to the various matters in regard to live stock, and live stock management of the Old Country; but it is not my intention to do so. If I have, in any way, impressed you with the fact that we must give still more attention to our live stock interests than we ever have heretofore in the Maritime Provinces, I shall be satisfied. Here lies the salvation of the farming industry of the East, and as long as I continue as head of the Agricultural College at Truro, I shall do all in my power to advance the live stock interests of our Province, for I thoroughly believe, from what I have seen and observed, here and elsewhere, that this lies at the very basis of our ultimate prosperity.

THURSDAY, December 6th.

POULTRY.

F. C. ELFORD, CHIEF OF POULTRY DIVISION, OTTAWA.

I am glad to represent here to-night such an important industry as poultry production. The person who does not believe the Maritime Provinces are adapted to poultry raising, had better not go up stairs; I do not know where you would find such an inspiring sight as you have up there. Go where you will, I do not know where you will see a better exhibit of poultry.

I am glad there are so many ladies here to-night; I do not know whether it is a weakness of mine or not, but I like to speak to the ladies —especially on poultry subjects.

Poultry, as a revenue producer, is what I am going to take up to-night. The average Maritime hen gets more for her eggs than the sheep for its wool. We all think poultry is very insignificant, compared with the other animals of the farm. It is not so; consider what the poultry does in the aggregate. I want to make a statement, and will try and back it up. There is no department of farm work that will return such a revenue for the money expended as poultry. According to the Canadian statistics of 1901, you would have to invest $100 in a farm to make from your field crops $20; according to the same authority, the sum of $100 invested in poultry will give you a revenue of $200. They say the people in Quebec do not understand the handling of poultry as well as the people in the other Provinces; but last year a farmer's wife in that Province bought two hundred and twenty eggs from one of our poultry stations for $4.50. She raised the chickens, and sold the poultry for considerable over $100. The poultry were pure-bred. I know a farmer's wife who contends that she makes more out of her forty hens than her husband does out of his five cows. A woman can do a great deal, and there is no better manager to be had in this line than a woman; a woman, as a rule, handles poultry better than a man.

The Maritime Provinces appeal to one as an ideal place for raising poultry. You have here a splendid local demand; you are close to the seaports; so your surplus stock can be sent to the Old Country if necessary. These Provinces should produce a great deal of poultry of a high grade. The poultry industry affords an occupation for even the youngest member of the family; I believe in training the young in the management of poultry. It is not a business that everyone, or anyone, can expect to succeed in. It needs two qualifications—industry and intelligence; and if you have not these, you had better not go into the business.

Here, in the Maritime Provinces, a great many young people leave the farm after they grow up, and I have not a word to say against it; but if those that remain would take up poultry raising, in a few years the extent of the trade would be surprising. I do not wonder that so few boys and girls take no interest in fowls. Go on the ordinary farm, and there is no inspiration to be had from the array of fowl you will see. In order to interest the young people in the production of poultry, buy a setting of good eggs, pure-bred eggs, the best you can get. I want to say here, you do not need to go outside the Maritime Provinces to get the best; you have just as good breeders here as you will find anywhere. Get the boy some pure-bred poultry, and give him a proper start. Explain to him, after he has his pure-bred poultry, that he is not at the top of the ladder; he is only beginning; he has a great deal to learn. He has to build his own strain up.

The poultry man has a double source of revenue; I am not speaking of the fancier—poultry and eggs. In order to have the best poultry, we must have suitable breeds. Take any of the American breeds, Buff Orphingtons; get the right type. We have heard a good deal at this Fair about beef, cattle, dairy cattle, and other lines of farming; but the hen, it would seem, is too insignificant to be allowed much time on the programme. Now, we must have the right strain if we are going to produce good poultry. We want a strain that will mature quickly, with good constitution, that will put on flesh rapidly; when we have this, and put our birds on the market, we can realize good prices. There is no money in raising a poor bird. I was talking to a produce man not long ago, and he said to me that he had three or four hundred chickens for sale. I told him I did not want them in their present condition at any price. "If you will fatten them for three weeks," I said, "I will give you $1.25 a pair for your chickens." That is better than selling at 35 cents a pair, and taking it out in trade. If we will produce a good article, there are many people who will pay a good price for it.

The best class of the trade does not want poultry drawn. I am surprised that you draw your poultry before putting on the market in these Provinces. It is not fair to the producer; it is not fair to the consumer. The person who buys a drawn pair does not get as good quality as if he had bought an undrawn pair. If starved properly, they will keep properly; and you will find the flesh much jucier and more tender. I want to give you a little illustration, to show that it pays to draw your chickens before selling. At one of our poultry stations we have four or five hundred birds. I will give you figures to show that it paid us to feed these birds rather slowly before they were fattened. If sold at prevailing market prices at the time, these birds would have brought about $93. They were fed for about three weeks, and consumed about $16 worth of food, and $7 of milk, or a total of about $116, as cost of fattening these birds. They brought, when sold, $204, ninety-three per cent. on the investment. You speak of your good investments making ten and twelve per cent., but here is a business offering ninety-three per cent.!

Eggs probably bring better returns than dressed poultry; they have been selling at very high prices for the past few years, and the prices will stand firm for some years to come. They have rarely gone below 15 cents, and frequently as high as 40 cents, or 50 cents; in Montreal and Ottawa they are selling for 60 cents. That is for absolutely fresh eggs; and so long as we put our eggs on the market, absolutely fresh, will we command good prices; so long as the consumer can depend upon his source of supply, there will be no falling off in the demand.

What about the supply? That is the question we should discuss a little more. In order to make the Maritime hens produce the eggs, we must follow some system of selection, much the same as in any other farm stock. We have to have an ideal, and strive to attain that ideal in breeding our poultry.

Some hens pay a handsome profit; but a large number are simply robbers, they prey upon us, and we have to keep them. I believe the only sure system of selection is the trap nest system. You can tell just what hens are paying, and what are not. If the farmer would take ten or twelve of his hens, and trap nest them, and simply set the eggs that come from the best layers, and continue the selection year after year, it would not be very long before our egg production would be doubled. In a nest of twelve pullets, at one of our stations, all pure-bred, receiving the same care and attention, we found a very marked difference in production of eggs. Two of them laid two eggs each, one laid twenty-seven. That one laid twenty-five in June; and when she had been laying nine months, she had one hundred and eighty to her credit, while one-half of the others did not lay fifty. At another station, in four months, one laid eighty-eight, which sold for $1.37; another one laid thirty-three, which sold for 55 cents; in both cases the feed cost 49 cents, leaving in one case a profit of 88 cents, and in the other a profit of 6 cents. At another station, one hen in nine months laid one hundred and sixty-seven; her mate, with the same care and attention, laid two. This simply illustrates the value of the trap nest.

A great many of us think we can pick out the hen that does the most laying, because of the way she acts. We see an energetic, industrious, red-headed hen, and think she is very busy, indeed; but we put just such a hen into a trap nest, and day after day she would come out with a great cackling, but never did she lay an egg.

I do not think every farmer will use a trap nest, but I do hope the breeders will. I do not think the day is far distant when the man who buys eggs and poultry, in addition to the mark and breed, will demand the laying qualities as well. You have here on the Maritime farm an average of fourteen hens, and this is a country where you could do so much in that line. I believe it will not be very long, considering the money there is in poultry, when the average will be fifty. However, these fourteen hens produced, in 1901, in the way of dressed poultry, in round numbers, $500,000, and eggs to the value of $1,000,000, or a total of $1,500,000. If we had been keeping fifty hens, we would have made about $2,500,000. Take these same fifty hens, and follow a system of selection for several years, and we have graded them up, until instead of laying ninety-three eggs, they produce at least one hundred and fifty; with eggs selling at the same price as in 1901, we would have $6,000,000 for the eggs, and $8,500,000 for the poultry. Figures sometimes do not convey their true meaning, but let me make a few comparisons with other produce in the Maritime Provinces. This $8,500,000 would amount to as much as the combined returns from the dairy industry, and the fruit industry in 1901. We think we have a fairly good country here for dairying; we know we have certain sections that are unsurpassed for fruit; but the industrious hens more than equaled both combined. The poultry products in 1901 equaled two-fifths of the farm crops; it would equal what was paid for milk, cream, butter, and cheese; pay all the hired help to milk and attend the cows, and all other help on the farm. It would pay for all the live stock sold; it would buy up all the fruit we had in 1901, and there would be enough left to pay for all the wool that was cut in 1901. Talk about your coal mines, your gold mines in these Maritime Provinces, the hens could buy up all your mines, and have enough left to pay the rent on all the leased farms in these Provinces.. I tell you, we could make things hum in these Provinces with the poultry industry—that is an industry worthy of your best effort. I am glad to say that people are beginning to find this out; I am glad they do not sneer at poultry, as they used to. I am glad that people, with money and brains, are going into the industry, and are going to make it seccessful. The time is past when it was thought that poultry were to be left for the women and children. The eggs produced in the United States in one year, if laid side by side, would reach twenty-five times around the world. There are a few items for you to think about in the above.

Thursday Evening, December 7th.

BEEF PRODUCTION.

PROF. J. H. GRISDALE.

Mr. Chairman, Ladies, and Gentlemen,—

Before starting, I want to congratulate you on the progress you have made in your beef production, if one may judge from your exhibits at this Fair, compared with your Fair of four years ago. I think I have visited as many Fairs as the average citizen of America; I have visited them year after year, all of them—Chicago, Guelph, Ottawa, and here, and I think I almost hold the record for Fat Stock Shows; and I must say that your show takes a very high place among the shows of that character in this whole continent of America. I suppose I should congratulate the stockmen more particularly; but it seems very strange to me that more of our farmers do not take up this industry of beef production.

Look at the title of the subject that has been given me—Beef Production. What is beef? The flesh of an animal of the genius Bos, or Cow. Now, that is a very wide term, as any of you know who have gone to the butcher and purchased a piece of beef, taken it home, cooked it, and wrestled with it for about an hour, and then gave it up. I do not want to talk about that kind, but the other kind, as illustrated in some of the magnificent steers that came into this ring yesterday and the day before, and the carcasses of which you had the pleasure of looking at to-day. Beef that almost melts in your mouth, that leaves such a taste, such a flavour, as you eat it, that you long for more. That is the kind of thing we want to talk about producing, and that is what requires skill to produce; and I want to impress upon you that that is the kind of beef that pays. Ninety per cent. of the beef produced in this country is of a character that does not melt in your mouth. That is the kind that is produced at a loss. Good beef can be produced at a profit. All I need do to prove this, is to ask some of the men who exhibit fat cattle here, if these young steers they sell have not brought them good money for the capital invested, for the food consumed, and for the labour expended. It surely is the way to make money in the beef raising industry to select a good article to work with. In securing a good animal to work on, we must first give some attention to breeding. We cannot hope to take any old animal, and feed it, and make a prize-winner steer, one that will carry off the Giles Cup or take first prize in the Block test. The breed you select is immaterial; you may take the Aberdeen Angus, or Galloway, or Hereford, or Red Pole, or Shorthorn. You can succeed with any of these, but you cannot hope to do so with any animal that happens to come along, from dairy steers, from any animal that happens to be handy. Give more attention to breeding. I am surprised that breeders do not try to impress this more strongly, that they do not try to induce other men to have animals of good blood strains, for there is money in it. I am afraid too many of our farmers are satisfied to go out and look up a bunch of steers and take them on account of their poor condition, when they can be purchased for a low figure. They bring them home, spend a lot of money, and energy, and time upon them, and then are forced to sell at a low figure. Then they will say beef raising does not pay, and that is the impression that commonly maintains among our people. If I could do anything to dispose of that idea, I feel I shall have done much to make this show a great success. We must get rid of the idea that producing this first-class article is unprofitable: it is the most profitable line you can follow.

I want briefly to call your attention to some of the principal points to which we should devote ourselves in our efforts to improve in this line. In the first place we must consider the age of the animal we shall use. There are two ways of producing beef: one raising from the calf till ready for the blcok, or he may go out among the farmers who live on cheap land, who do not care to do any feeding, and buy feeders, stockers, and feed them. I am going to talk, in the first place, to those why buy feeders. Buy young ones. Our experiments, and those all over the world, have proven, over and over again, that the animal that produces beef the cheapest is the young animal; the younger, the cheaper the beef can be produced. I stated some figures here last year that did not please some of the audience; I am not going to repeat them, but I will say that it is very bad management to keep animals until they get beyond the profitable age, just the same as it is to keep a bacon hog over 200 pounds. You can produce pork up to a certain weight for four and a half cents; but if you let it go a hundred pounds more, it will cost five and a half. So with beef; you can produce it up to a certain age for four and a half; after that, the limit of profit production is passed. Two-year-old steers are undoubtedly the best to buy.

Let me urge upon the man who is raising his steers: Get them on the market as soon as possible. Every animal, no matter for what purpose it is kept, has to be kept alive. If an animal requires five cents per day to keep her alive, if you keep that animal for two years, it requires about $35; three years requires $50. What you can put into the animal over and above that is profit. Suppose you can bring her right at two years old; it will cost $35 to keep her, and $15 to put on the gain, which will make $50; then your animal will bring from $65 to $70. If you keep the animal three years, and it costs $50 to keep it alive, and $15 to put on the gain, then you have your cost of production up to the selling price, and where is your profit? We have carried on experiments for many years, and these figures are exactly right.. We have taken steers from the moment they were dropped, and fed them for two years, and we got a profit, a good profit. We have taken similar steers and fed them until three years old, and they made us a loss. Steers put on the block at two years old made us a profit of from $10 to $20. Steers kept for three years always made a loss.

Therefore, I maintain that it is impossible for the farmer in this country, who occupies land that is worth over $50 an acre, to raise steers to three years old and make a profit. It is possible to do it if you have cheap land, worth from $4 to $10 per acre; then it is possible to raise steers to that age; but you are sure not to get as good beef, which is certain not to sell at as good a price as beef put on the market young. That you can produce prime beef at twenty months old, needs no support from me. You have seen it here in this ring. Such steers command the highest prices in London, New York, and Chicago. Last year we fed a bunch of steers for thirteen and a half months, and put them on the block when they weighed nine hundred pounds on the average, and they brought five and a half cents per pound, live weight, and made an excellent profit of $15 per head. Nearly fifty per cent. on that transaction. What comes up to that? You can always sell that kind of beef; it is always ready for the block. You always have the goods, and you can command the market. You can have the cream of the trade in any city.

A word or two in regard to method of feeding. We have had experiments in feeding loose *versus* tied. Whether it is an advantage to feed loose depends upon the number you want to feed, and the ages and uniformity of the animals. Do not mix little ones and big ones; there is certain to be a loss, and it is much better to tie that class. If you have a uniform lot, there is a chance of making a profit.

As to feed. We consider this an ideal method of feeding, and well suited for these Provinces. In the fall, you bring them in in October; there is nothing equal to a little field of rape, on which to run them, or feed turnip tops. They need something that contains sulphur, which will serve as a tonic, and keep them in good condition. Prof. Andrews has been telling you about the great value of sulphur, and sulphur compounds, in connection with live stock. Here is one case that exceedingly well illustrates the value of sulphur. There is nothing in which turnip tops are so rich as sulphur. Rape is also rich in sulphur. If you want to put your steers in first-class condition for producing beef, give them an acre or two of rape to run on before they are housed, or give them turnip tops, and feed gradually. Feed a little straw or hay with the turnips. Mangels are also good, but not as good as turnips. You want something that will loosen them out, and make all the digestive organs work well together.

It is a mistake to start to feed meal at an early age, unless you want to place them on an early market. For the Eastern market, do not begin to feed meal until near Christmas, or the middle of December; and when you do begin, it is a great mistake to start to feed too heavy a ration. Start them with one pound a day, and do not be in too much of a hurry to raise that quantity; but bring it up gradually, say one-half a pound at the end of the week, probably one pound at the end of two weeks, and so, increasing gradually, until you are ready to put them on the block. The longer we feed steers, the more expensive are our gains; therefore, the quick feeding is by all odds the more profitable. You cannot always command the top prices for your matured steers, you may have to keep them a little bit longer, but you will make more money on these steers than those that have been fed more slowly. This matter of quick or slow feeding is an important one, not only on account of the prices obtained, but on account of the character of the feed used. Steers fed for a long time will necessarily consume a larger portion of meal during their whole feeding period than will those that are fed for a short time. One group of steers we fed for two years on as good a grain ration as we could give; they consumed 11,500 pounds of meal, and 72,000 pounds of ensilage. There were five steers in the lot. We fed another group of the same number more slowly for the same length of time, and they consumed 5,200 pounds of meal, and about 95,000 pounds of ensilage. The steers that were fed the larger portion paid for the meal and roughage, and left a profit of about $15. The other steers were fed a larger quantity of roughage and a smaller quantity of meal, and a net loss of $5 resulted. In one case we had to buy a larger quantity of meal, twice as much; but the animal paid for it, and made a profit. Which is the more profitable transaction? You can decide that for yourselves. For the man who has a little capital, and can afford to feed the meal, quick feeding will return him a profit. I think I am safe in saying our experiment illustrates the average result to be obtained along these different methods of feeding.

This is a subject that could be discussed at great length, but the hour is late, and I must desist.

Question: What did you value your feed at?

Prof. Grisdale: Roots and ensilage, $2 per ton; clover hay, $7 per ton; straw, $4 per ton; meal, according to market prices, an average of 1 cent per pound. The meal we used was gluten meal, costs $27 per ton, and bran cost us this year $14; it would probably cost you about $20. We mix a larger portion of the bran than we do of the gluten, and our feed really costs us about $18.50 per ton.

THURSDAY EVENING, December 7th.

LIGHT HORSES.

DR. HENRY READ, GEORGETOWN, ONTARIO.

Dr. Read said: In dealing with the matter of light horses, I am not going to discuss the breeding of the animal at all; the same rules will apply to light horses that I applied to heavy horses last night, so far as the breeding is concerned.

There are just three classes of light horses in our country. The road horse, represented by the Standard Bred; the carriage horse, represented by such breeds as Cleveland Bay, the English Hackney, French and German Coach, and the Thoroughbred. A good many of our best light horses are bred from the Standard Bred, animals that are not bred for great speed. The carriage horses in this country are produced from the Hackney or Coach horses. The Thoroughbred is the king of all light horses, and we can trace him back for a thousand years. The English took hold of him about two hundred and fifty years ago, and developed a good horse. They got him from the Arabs, who paid great attention to his breeding. This animal is at the bottom of all our light horses. Even the American Standard Bred has Thoroughbred blood. Their courage and stamina they obtain from him. The function of a road horse, of course, is to go along quickly. Good Standard Bred horses should move quickly, and stick to it for a long time. When we consider the carriage horse, we do not want this—the carriage horse does not have to move very far, or very fast. He may be termed the "Gentleman of Horsedom;" he is hitched to a magnificent carriage, and he takes the rich man down the streets of the city; he has not very far to go, nor has he to move very fast; but he has to make a respectable appearance; and such horses are valuable as carriage horses, provided they have a gentle temperament. They must have a good disposition, because they are largely used for drawing ladies and children. The Thoroughbred horse is largely used for saddle purposes. I would like to urge upon the farmers the mistake they are making in not riding the young horses that are growing up on the farms. Our young farmers are notorious bad horsemen. I have judged in every Province in the Dominion, and I have never been to a place yet where you would see any number of young farmers able to get a horse and show him properly as a saddle horse. If the boys and girls would do more riding, they would find more enjoyment and pleasure.

As regards the care of horses, I would say that all depends upon two things—care and exercise. I believe a man should teach his horse to drink water the first thing in the morning, before breakfast. There is almost always, even in the system of the healthy animal, a certain amount of mucous, placed there during the night, when the organs are at rest, and in the morning juices are thrown out which do not come in contact with the food, because of the film of mucous between the juices that are secreted and the food. The tendency of the water is to wash the stomach clean. The same thing applies to the human being.

A great many farmers are afraid to give a drink of water to a horse if he is a little bit warm. I have known horses to do a hard day's work, and, being a little bit warm, they were stood in the stalls and made to eat dry feed. Do not misunderstand me; I do not mean to say that an animal is never too hot for water; but a horse doing the ordinary farm work is never too warm to water, even although the sweat should be dropping from its sides. Horses will be better off if they get their water first.

Feeding. As a rule, a farmer feeds about 30 to 35 per cent. more hay than is necessary. That hay is wasted. If a horse is working ten hours a day, and then comes a season when it is not working, the farmer would be surprised to know that the horse would eat far less hay during the busy time than when he was idle. Horses should never be allowed to stand with hay before them all day long. Make them eat the feed up clean three times a day. No light horse is fit to be hitched to a buggy and driven eight or ten miles if his stomach is filled with hay. The average heavey horse is produced by just such treatemnt, and the farmers are the men who make the heavey horses of the country to a very large extent. Did you ever hear of a horse becoming heavey in a livery stable, or did you ever hear of a doctor's horse suffering from that complaint? It is very rarely that such a case occurs. The farmers feed too much hay, and that is the reason why the horses in the country suffer from heaves. The horses in a livery stable get no hay at all for dinner. In my own stable, I feed the horses what I think they will eat up clean before morning, when I go to bed. That is the only full feed they get in the twenty-four hours. I assume they are not going to be driven any during the night. During the day time, I keep them pretty empty, so far as hay is concerned. In the morning they get enough to keep them eating for half an hour; at dinner time they get no hay at all, nothing but oats. The horses appear to be hungry, but they are always in good condition, and always fat and plump. My father used to tell me it was a shame to starve the poor horses, but I would draw his attention to the fact that they did not look starved by any means. They are hungry, but not suffering for want of food, and are in good condition to drive right along without fear of heaves.

Heaves, of course, is a disease of the lungs. When a horse is compelled to work with its stomach full of hay, the stomach bulges out and occupies some of the room that properly belongs to the lungs. When the horse is moving smartly, he wants to take in lots of air, and he cannot do so; there is not room for the lungs to expand, and the horse is moving along in a most uncomfortable condition. Let the ordinary human being get up from the table, after eating a full meal, and start off to walk a mile, and he would be able to appreciate the condition the poor horse is in under similar circumstances. But if that man sat down and rested for a couple of hours, until the stomach was empty, he could accomplish his mile without any inconvenience. It is treatment such as that, prolonged year after year, that produces so many heavey horses in our country, and the extra amount of feed fed is wasted.

Horses should have regular exercise, and one of the most common diseases of light horses is due to lack of exercise. That disease is called asture. I do not know of any other name. It invariably happens something like this: The horse has been standing three or four days, well fed, and without exercise. He is hitched up and started off at a good clip. He has not gone more than a mile when he falls on the road. That is the ordinary story with which every veterinary is familiar; and many trips have I made to start such horses. That horse did not get regular exercise, or the probability is that he would never have suffered from the disease. It requires a certain amount of exercise, after a period of rest, to develop it. A man who drives an animal with this desease till he drops in the road, should make him as comfortable as possible, make him sweat as much as possible, and send for a veterinary, because it is a serious disease.

Speaking of heaves, I omitted to say that heaves is an uncurable disease. Of course a horse will suffer for some months from the disease before there is any change in the structure of the lungs, and the progress of the disease can be arrested under certain conditions. If he has been suffering for a year or more, you may as well give him up. If you have a horse threatened with heaves, feed none but the very best of hay, the cleanest and brightest, and not very much of it at any time, except at night, and moisten it, so that he will breathe in nothing of an irritating nature. Musty hay should not be fed if avoidable; but if you must feed it, see that it is moistened.

MEETING OF MARITIME SEED GROWERS' ASSOCIATION.

A meeting of the Maritime Seed Growers' Association was held in the Director's room of the Winter Fair Building, Amherst, N. S., on the afternoon of Tuesday, December 5th, 1905. Mr. Thomas A. Peters, Deputy Commissioner of Agriculture of New Brunswick, was elected to the chair. The meeting was well attended, and a lively interest was maintained throughout.

Mr. F. W. Brodrick was the first speaker.

SEED GROWING IN THE MARITIME PROVINCES.

Mr. Chairman, Ladies, and Gentlemen,—

In dealing with a subject of this nature, I think it would be well, before entering into a discussion of the question from the standpoint of the possibilities of the industry, that we first take up a brief review of the existing conditions as relating to the question of seed growing. In doing this, wemight look very briefly at the conditions of the seed trade, as we find it in the Maritime Provinces.

I think I would be quite safe in saying that seven-eighths of the grass and clover seed, and a large percentage of the different grains used here for seeding purposes, are imported from outside sources. A large portion of this seed comes from Ontario, and parts of Western Ontario. That in many cases this seed has been of low vitality, and doubtful purity, we are well aware.

The wholesale importation of seed of inferior quality has had, no doubt, a very detrimental effect on the agriculture of these Provinces. Through the media of imported seed, many vicious weeds have been introduced into the farms throughout these Provinces, while the continued use of seeds of low vitality has occasioned considerable loss—in the form of greatly reduced crops on many of our farms. Besides, imported seeds never give such good results in the production of large crops as a good quality of home-grown seed will give. This statement is substantiated by abundant experimental evidence obtained in the United States, England, and Canada. By referring to home-grown seeds I mean seed that has been produced under similar geographical conditions to those under which it is likely to be sown. In using home-grown seed, a much better opportunity is afforded to learn of its purity and viability, and previous history, than when imported from outside sources. This information may be of great value in selecting productive strains of seed.

Allowing that home-grown seed is more desirable than imported seed, it might be as well to look at the possibilities for growing a good class of seed throughout the Maritime Provinces. Soil and climate are the two important factors that effect, to the most marked extent, the quality and yield of any crop. Providing these factors are favourable, a good crop of any description is assured.

Seed production in a northerly climate, where the season is comparatively short, is regarded as being of much better quality for crop production than seed grown in climates further south. Reasons being, that seed that is produced in the north will produce a crop that is earlier and of more vigorous growth than seed produced further south. This fact is well illustrated in northern-grown potatoes, or Indian corn seed. In this respect, then, the climate of the Maritime Provinces should be an ideal one for seed production. The climate here, however, is rather too short to mature successfully the seed of all crops that may be grown with success in the Provinces. For instance, Indian corn seed, and the seed of the clovers, may not be matured in some sections of the Province to such a degree as to be of value for seed. Outside of a few special classes, however, the greater bulk of seed required could be produced within the Provinces.

In regard to the question of soil suitable for seed growing, conditions are not so favourable in these Provinces as they might be, as much of the soil is unfertile, and poorly adapted for successful seed production. I think, however, our farmers could do much toward improving these conditions if they were to adopt, in the management of their farms, some of the advanced systems of rotation. This would, in a measure, tend to keep the land up to the desired state of fertility, and also keep the farm freed of various weeds and other impurities, which are so objectionable in the production of a high-grade class of seed. This question of keeping the land up to a good state of fertility is one of prime importance in all departments of farm practice. Land that is depleted of available plant food and vegetable matter is in bad shape for successful crop production. Therefore, no matter what line of farm work we intend following, we must first solve the important question of how the fertility of the soil may be maintained, and the farm still conducted at a profit.

I think, then, from my experience in travelling over these Maritime Provinces, that this question of soil fertility is one of the most important issues before our farmers and seed growers.

The system of farm management most commonly followed throughout this country is not one that will, in a very great measure, tend to add to their fertility, or keep them freed of the various weeds that are bound to creep in. The rotations are too long, and the soil too rarely broken up and subjected to a cleaning process.

On many of the farms only small patches here and there through the fields are devoted to the growing of the regular farm crops. This system is contrary to the best methods in farm practice, and would have to be adandoned in the adoption of a systematic rotation. The tillable land on the farm should be divided into four or five sections, and each section devoted to the growing of a separate crop. Each year the crops of the different sections could be changed in regular order. This would prevent the possibility of two crops of the same nature being grown on the same land two years in succession. How crops, such as roots and potatoes, and fertilizing crops, such as clover, could be introduced into the rotation, which would keep the land freed from weeds and maintain the fertility of the soil. Together with the introduction of a systematic rotation, the land could, with profit, be subjected to a more vigorous and thorough cultivation, which would greatly improve its texture and water-holding capacity, and its ability to produce abundant crops. Although the climate in these Provinces does not make it so imperative that particular attention be paid to the improvement of the water-holding capacities of soil, still, I think that in many cases this is a phase of the subject that does not receive the careful consideration that it merits. During recent years there have been times when the question of soil moisture has been a matter of great importance to the farmers throughout these Provinces. More thorough cultivation is also needed to render the plant food within the soil more readily available for the use of the crop growing on it. It is also essential in the production of a high class of seed, that a fine, deep seed bed be prepared before the crop is sown. This gives the young plant an excellent opportunity of developing an abundance of roots, and making a strong, vigorous growth in its early life, which is so essential to insure later productiveness.

In the matter of seed growing, it might be said that every farm in a locality is not adapted to the growing of all classes of seed. On some the soil may be too light, while on others it is too heavy to produce seed of good quality. There are, however, in nearly every locality some farms that seem especially adapted to the growing to a high state of perfection certain classes of seed. By setting these farms aside to the growing of this special class of seed, much would be done toward the advancement of agriculture in general. Special attention would have to be given to the cultivation, and to maintaining the soil at a high state of fertility, in order that seed of uniform good quailty be produced.

This is an age of specialization, and, in the matter of seed growing, as in all branches of agricultural effort, special attention will have to be directed toward it. The successful seed grower will have to become a specialist, and endeavour to select, as far as possible, those strains and varieties that are most profitable for his own particular locality.

As the members of this Association are well aware, much can be done to improve the vigor and productive capacity of seed by subjecting it to a system of careful selection from year to year, and developing within a variety a vigorous and productive strain. The limit to which this improvement may be carried depends, in a large measure, on the care and skill exercised by the grower in making his selection.

This phase of the question will no doubt be discussed, and in different ways, by others present.

I shall endeavour to review briefly the outlook for further development.

At present, there are very few men who are carrying on in these Provinces, in an extensive way, the production of a high class of seed. These men have confined their efforts principally to the improvement of the various spring grains. Judging from the work I saw being conducted last year, I would say there is a marked improvement going on throughout the country from year to year in the quality of seed grain used.

As the work conducted by these men (members of this Association) has been going on only a few years, but little is known in a general way of their efforts. As a consequence, the demand and prices paid for this high class seed has not been so great as it otherwise would have been had the work been more generally known.

Before the merits of seed improved by a system of careful selection are fully recognized, and an extensive use made of it, much patient labour will have to be expended. The public in general will have to be educated to the advisability and importance of using the very best seed that can be procured. However, as the merits of improved seeds are more fully realized, the demand will gradually widen, and pure bred seed will be as much sought for as pure bred stock.

Although the work is not widely known, I would say that there is an immediate demand in every locality for a number of men to take up the production of a superior class of seed. To these men who take up the production and improvement of the seed, after the method followed by the members of this Association, I have no hesitation in saying that all the seed that could be procured in this way would in a short time have a ready sale in the home market.

This work of improvement has, up to the present time, been confined exclusively to the cereal crops. I think, however, the scope of the work could be very profitably extended to other classes of farm crops. For instance, an unfailing supply of good strains of seed of the more profitable varieties of potato would, with certainty, find a ready market through these Provinces. Potato growers in the State of Maine, who make a specialty of growing seed tubers, find a ready demand in all parts of the United States for this Northern grown seed.

Root seed, such as the seed of turnip, mangel, or sugar beet, home grown, and improved in this way, would always be in demand. This is a phase of the work that has heretofore never been undertaken to any extent in this country. In a country where the root crop is such a valuable one, and where the seed has always been imported, there is no doubt that much could be done toward increasing the yield and improving the quality of this crop by producing home grown seed, and exercising care in the selection of the roots to produce that seed. In England, where much attention is paid to the production of this crop, the greater part of the seed used is home grown. This seed is produced from stock that has been subjected to a system of careful improvement from year to year for many years back.

The same is true in France and Germany, where the mangel and sugar beet are such important crops. The productive strains that they have growing there have been gradually evolved by years of patient effort from the wild native forms.

A word in regard to the sale of improved seed. Seed that has been improved in this way is of far superior quality than ordinary grown seed, and should be sold for a much higher price. I think, however, to bring this class of seed into more general use, exorbitant prices should not be charged for it. A moderate scale of prices could be set to govern the scale of seed improved to a certain standard. For instance, seed improved after this manner for a certain number of years could be sold for a certain price, and so on for each year that it is improved. An adjustment of this nature would be more satisfactory, both for buyer and seller, and hasten the time when all will use pure bred seed.

Mr. Donald Innes: Take a piece of good land, and very inferior seed, and take a piece of land of inferior fertility, and good seed, which would have the best effect?

Mr. Brodrick: I would think the better seed would.

Mr. Peters: Such seeds as turnip, beet, carrot, and parsnip anyone can grow on their own farms. By careful selection the seed can be improved from year to year. I have had considerable experience along this line, and with the selected seed from my own plot I could secure crops twenty per cent. better than any I could grow with the commercial seeds. In the case of turnips, you can get three times as much seed from a long-necked, rough turnip as from a small-necked one. Consequently, some seedmen grow seed from these long, rough ones, giving seed of an inferior quality. Quantity is what they are after. High-grade turnip seed cost about twenty per cent. more than the ordinary kind; but it will give you a hundred per cent. better quality when you harvest your crop.

Col. Spur: The question was asked with reference to poor seed and good land, and good land and poor seed. I heard a farmer say it did not make any odds about the seed; he had tried it. He had some good seed, and it ran out; and he also had some that were not so good, and he couldn't see much difference. That is the way some farmers look at it. I believe in good seed, and I have tried both. I had some seed from Rennie, 25 bushels of 20th Century oats, which I sowed on a piece of land, and got the best crop I ever had. I got an average of 60 bushels to the acre. A great many of our farmers sow too much, probably about four bushels to the acre. They do not get as good crops as if they sowed less. The matter of securing good seed is of the greatest importance. We often pay a good price for what is called first-class seed, and do not get any such thing. Our fields have often become covered with sorrell, and such weeds, and the seedsmen seem to care nothing for the curse they put upon us in this way.

MR. DONALD INNES, TOBIQUE RIVER, N. B.

Mr. Innes took a prominent part in the Macdonald-Robertson Seed Competition, and kindly consented to explain his method of work.

You all know I have been interested in the seed competition for a good many years. I do not take much credit to myself, but to my boy, who is not very rugged, and takes charge, and really conducts the work. We have been at it for six years. We went through the Macdonald competition. Before we commenced, I was always in the habit of grading my seeds with a Chatham mill, taking out the small seeds and sowing the larger ones. I had good success with this way of doing the thing, and to-day I have grain of the same strain I had fifteen years ago, and it is as good as ever. We thought it was going to be a big job to hand-pick a quarter of an acre. The stipulation was that it should be an acre, but it was reduced afterwards to a quarter of an acre. The next question, after the heads were picked, was how to thresh without losing any. However, we overcame this difficulty by placing them in a bag, the same as you would beans. A considerable loss was made by tramping down grain in picking the large heads in the quarter acre. Next year we omitted one row, and so had a little patch on each side to work from, and thus overcame this waste. We planted the large heads next year, and so on year after year. For our ordinary crop we put our selected heads through a Chatham mill. This year we had about five acres; three of us picked the heads, and it did not take so very long, either.

Col. Blair: I have always felt that the question of pure seed was the most important the farmer has to deal with. I have done a good deal of Institute work, and I have never lost an opportunity of touching upon this question. It is surprising what can be done by careful selection of the large heads, and sowing nothing but seeds from the large heads; and I was very pleased to hear of the success of my friend, Mr. Innes, in this connection. I, myself, succeeded in getting 86 pounds of oats from one pound sown. That shows the possibilities. Of course, they werehandpickedseeds. Sometimes we make a mistake by judging oats by weight, because there are oats with a very thick hull, which will weigh heavily, and yet contain little meat. Prince Edward Island oats weigh very heavily. The Banner has a very thin hull. This Association should keep alive the matter of good seeds for the farmers in these parts. At Truro, a farmer left one store and went to another across the street, because the latter offered seed at two cents per pound cheaper; yet, by actual test, the seed at the first store had seventy-three per cent. of seed that would germinate, while the other store had forty-three per cent. of seeds that would germinate. You should send to Rennie, or some other reliable man, for your seeds. That the farmer does not always get first-class seed, is his own fault, from the start to the finish. In the case of clover seeds, the first-class seeds are sent to the Old Country from Ontario, and the second and third class come down here.

Mr. Peters: In Fredericton we have caused a revolution in the seed trade. The merchants told me they would like to sell good seed, but they could not do so to any extent. I induced one to get a quantity of the very best seed he could buy, and to place it alongside of the poor seed. Then when a customer would appear, and learn the price of the good seed, he would probably say, " Oh, but I can buy seed for so much less across the street." Then the merchant would be able to say, " Yes, and we shall sell you the same seed here for the same money; but it is an inferior seed." In almost every case, the customer would carry home the high-grade article.

The germinating qualities of seeds can be tested in a very simple manner. Take a small flowerpot saucer, and place the seeds therein. Then place this saucer in a larger one, and surround it with water, placing a third saucer over the top of the inner one. It is a very convenient method, and you can note the process of germination from day to day.

F. H. NEWMAN.

Secretary of Canadian Seed Growers' Association.

This subject of pure seed is one that has not received the attention it merits. With organizations such as this Association actively at work, much advancement should be made. Our schools, colleges, institutes, and such like, are all doing good work. We need a medium between the Experimental Stations and the farmers, something that will give the farmers the information they need, in a nutshell, as it were. This Association hopes to do this work. The people do not take time to read the reports and bulletins, and they are so numerous that they cannot be blamed; the working hours of the day are long, and a man does not care to sit down after work and make his own deductions. We propose to do this for him, and to give individual assistance, to talk the matter over with him, and we are confident of good results.

THE PRINCIPLE OF HEREDITY AS APPLIED TO PLANTS.

The law of heredity, the principle to which all animal breeders look in their work of improvement, is not so generally associated with plant life, and yet, it is quite as potent a factor in the case of plants, and must form a like basis for improvement. Until we realize that a plant is capable of transmitting its characteristics, be they good or bad, to its offspring, we will accomplish little by way of evolving a more profitable strain. It is, therefore, with a view to showing how the forces of nature may be turned to good account, and to point out the steps that have been taken to form an organized effort to direct these forces, that these lines are written.

THE NECESSITY OF SECURING GOOD VARIETIES.

In undertaking to improve any one crop, there are several things we must consider further; we must consider the question of variety, determining, by actual test, that variety which is at present best suited to the conditions of soil and climate under which it is to be grown. Many farmers secure good varieties from our Experiment Stations, and wonder why they do not remain good naturally. We have no guarantee, however, that such varieties will remain high-class when no particular attention is given them. On the other hand, we know they will depreciate in quality (run out), and sometimes very rapidly, unless we sow only the best seed selected from the gross supply.

EVIDENCE OF THE VALUE OF SOUND. PLUMP SEED.

Below is given a summary of experiments conducted at the Ontario Agricultural College by Prof. C. A. Zavitz, to ascertain the relative value of plump seed of different sizes.

Mr. Zavitz says in part: " We have conducted experiments for at least six years in succession, in comparing large plump and small plump seed of each of five classes of grain crops. In all the tests, equal numbers of seeds of the two selections were used.

The following gives the average yield of grain per acre for the several years during which each each experiment was conducted:—

Oats—	large plump seed,	62	Bus.	Small plump seed,	46.6	Bus.
Barley—	" "	53.8	"	" " "	50.4	"
Winter Wheat—	" "	46.9	"	" " "	40.4	"
Spring Wheat—	" "	21.7	"	" " "	18	
Peas—	" "	28.1	"	" " "	23	

" In averaging all the tests made with the five kinds of grain, it is found that the large plump seed gave a yield of 19.1 per cent. more than the small plump seed as the direct result of the first selection."

THE IMPORTANCE OF SELECTING SEED FROM PRODUCTIVE PLANTS.

The results of the Macdonald-Robertson Seed Grain competition, which lasted from 1900 to 1902, bears ample evidence of the possibilities for still further improvement in our farm crops. One thousand five hundred boys and girls from all parts of Canada entered this competition, although only 450 completed the three years' work satisfactorily. Each competitor was required to operate a quarter acre plot of either wheat or oats, and to select from the crop produced thereon at harvest time a sufficient quantity of heads from strong, healthy, productive plants, to sow, when threshed and cleaned, another quarter-acre plot the following year. The prizes given in the yearly competition were awarded according to the number and weight of kernels per 100 heads, and in the main competition the awards were based on the total yield of the entire plot. Careful records were kept each year of the work, and in the following table is given the average results for all Canada:

SPRING WHEAT.

YEAR.	Average number of grains per head.	Average weight of grains per 100 heads (Grams).	Average yield per acre (Bushels).
1900	42.9	142.9	25.32
1901	46.9	162.6	30.
1902	51	183.3	35.44

OATS.

YEAR.	Average number of grains per head.	Average weight of grains per 100 heads (Grams).	Average yield per acre (Bushels).
1900	116.9	301.6	54.08
1901	121.2	343.3	59.44
1902	140.2	385.5	73.72

It will readily be seen from the above table that each year saw an improvement in the productiveness of the crops operated with. While no doubt the better cultivation given to the soil, and the more favourable conditions offered, the crop had much to do with this improvement; still we have no hesitation in saying that the selecting of the best seed from the best plants each year intensified the capacity to produce larger yields. Ninety-two per cent of the certified reports go to show that crops on the quarter-acre plots were decidedly more thrifty and productive than were the crops of the same varieties grown from unselected seed on the same farm, and during the same season.

While, therefore, there is a very apparent advantage to be gained by thoroughly screening grain set aside for seeding purposes, still, if we would reap largest returns, we must go a step further, and pay special attention to the mother plants, from which the seed should be selected,—we must, in fact, learn to look upon the plant as the unit of production, rather than the individual seed.

Every careful grower will have noticed the difference between the product of one wheat plant and another, and of one hill of potatoes and another. Not only will he have noticed a difference between the different plants, as regards the total yield, but he will have noticed in every head of grain the presence of a number of smaller kernels, and in most hills of potatoes the presence of smaller ones. Invstigation goes to show that the small seed from the productive head is better than the large plump seed from the unproductive head. This being the case, it is not enough that we simply " fan " our seed grain, thereby securing the largest kernels, or that we select for seed purposes the most desirable potato tubers, irrespective of the productive capacity of the plant. We must rather take both factors into account if we are to realize largest returns for our labour.

It must not be understood, however, that we recommend that seed for the entire farm be selected in this way, but rather that a system such as that adopted by the Canadian Seed Growers' Association be taken advantage of as one which will be found practicable and profitable for even the busy man.

THE CANADIAN SEED GROWERS' ASSOCIATION.

The Canadian Seed Growers' Association is the final outgrowth of the Macdonald-Robertson Seed Grain Competition. The object of the Association is to advance the interests of seed growers and other farmers by,—

(*a*) Making regulations respecting the growing, selecting and preserving of seeds of variuos kinds of farm crops for the guidance of its members;

(*b*) Causing records to be kept of the history of seeds produced by members;

(*c*) Fixing standards for seeds that may be eligible for registration;

(*d*) Publishing information as to standards;

(*e*) Issuing Certificates of Registration to members by which hand-selected seed, or the product therefrom, may be known from other seed;

(*f*) Assisting members to dispose of surplus pedigreed seed at a profitable margin;

(*g*) Such other means as may be expedient from time to time.

THE SYSTEM OF IMPROVEMENT.

The new beginner, having decided on the variety he wishes to improve, secures a sufficient quantity of seed to sow, at least, 1-4 acre of land, which land should be well prepared, and free from weed seeds. At harvest time comes the critical point, for it is then he must decide upon the kind of *plant* he wishes to perpetuate, keeping in mind that great law of heredity, viz.: that "like begets like." He should then select in the main, from a strong, healthy, vigorous plant, bearing, in the case of the smaller grains, a well-shaped, productive head, and one that is decidedly superior to surrounding plants in this respect, but not so influenced by particularly favourable conditions. *The starting point, once given all permanent progress, lies in continued selection* carried on patiently and persistently year after year. Each year a sufficient number of heads of the desired type should be selected to give, when threshed and cleaned, twice as much seed as is required to sow a 1-4 acre plot again. The reason for selecting a double quantity is to keep some in reserve, and thus to avoid the danger of losing well-bred seed through the failure of a crop. This, of course, applies to seed that has been selected for several consecutive generations, and which will thus be too valuable to lose.

After the hand-selections have been made from the seed plot each harvest, the remaining crop may be harvested and threshed in the usual way, but kept separate from other grains, and particularly from other varieties. This seed may be used the following year for the general farm crop, and in this way the careful breeder will soon improve his crop to an extent almost beyond his own belief. This method can find no better argument in its favour than that given by our best growers, who find that the time expended in carrying it out is small compared with the benefits to be derived.

In the case of corn, it is necessary to isolate the plot at least 1-4 mile from corn-fields of other varieties in order to avoid crossing. Each row is planted with a separate ear, and when the tassels (male organs) appear, they are removed from every other row, and the ears for the breeding plot of the following year are selected from the detasselled plants. In this way these ears will have been fertilized by an adjoining plant, which is shown by authorities on the subject to be a decided advantage.

THE KEEPING OF RECORDS.

Blank forms are sent in duplicate yearly to all members of the Association, in order that they may record the results of their work in such a way that an accurate record of the capabilities of the variety may be kept at headquarters. When the variety has reached a high standard of excellence, and has, after three or four years, shown its superiority and its purity, it is registered as "Pure Bred," and pedigrees, or certificates of registration, are issued in much the same way as is done in the case of live stock. These certificates may be used in the sale of high-class seed, as an assurance to the buyer as to the quality and capabilities of the said seed.

Members having a surplus of registered seed on hand are assisted in the disposal of such seed in various ways.

CLASSES OF REGISTRATION.

Certificates of registration will be issued each year for the *hand-selected seed* (seed selected by hand from the most promising plants on the hand selected seed plot), *improved seed* (general product of the hand-selected seed plot), and *general crop seed* (product of improved seed plot), that may be eligible for registration. The signature of an operating member to such certificate of registration is a guarantee on his part that the seed for which the certificate is issued has been produced in accordance with the by-laws and rules of the Association.

MEMBERSHIP.

No membership fee is at present required. Applications for admittance to the Association should be sent to the Secretary.

REFERENCES ON SEED IMPROVEMENT.

For further information on the subject of the improvement of seeds, and the work of the Canadian Seed Growers' Association, we submit the following references:—

Evidence of Prof. Jas. W. Robertson, before the Committee on Agriculture and Colonization, 1903.

Minutes of the First Annual Meeting of the C. S. G. A.

Minutes of the Second Annual Meeting of the C. S. G. A.

More specific information *re* the work of the above Association, and methods of improving any special kind of crop, will be given on application to the Secretary.

REPORT OF FRUIT JUDGES AT AMHERST.

E. B. Elderkin, Esq., President Maritime Winter Fair, Amherst, N. S.

SIR,—We, the undersigned, judges of fruit at the Winter Fair, 1905, beg to submit the following report:—

The exhibit of fruit was excellent, a marked improvement on previous years. The most hopeful sign is the greater care taken in selecting and handling the exhibits, showing that the exhibitors are becoming educated up to the point where they realize the need of skill and judgment in exhibiting fruits, as well as live stock, or any other product of the farm.

There were forty-five (45) exhibitors: Six from Prince Edward Island, twelve from New Brunswick, and twenty-seven from Nova Scotia. Cumberland County, N. S., leads with eleven exhibits, and it is certainly encouraging that a county which is usually considered one of the poorest for growing fruit, should show so much and such good fruit.

NEW BRUNSWICK.

ALBERT COUNTY.

Two collections.

1st. To W. A. Colpitts, Mapleton.

2nd. To John Colpitts, Mapleton.

The following varieties in both collections are good specimens: Alexander, Fameuse, Ben Davis, and Wealthy. Wealthy, very good, indeed.

YORK COUNTY.

1st. To J. C. Gilman, Kingsclear.

2nd. To S. B. Hatheway, Fredericton.

In the first collection the following varieties are excellent: Emperor, St. Lawrence, Spy, McIntosh Red, Pewaukee, Fameuse, and Ontario. Also a new apple, the Merritt; some very good specimens.

In the second prize collection, McIntosh Red, very fine. Good, Wealthy, Ben Davis, Bishop Pippin, Emperor, Fameuse; also some good specimens of Hass, which latter we do not regard as a very desirable sort.

KINGS COUNTY.

1st. To C. E. Dixon, Hampton.

2nd. To Arnold H. Fairweather, Hampton.

Both collections rather under the mark in quality and condition.

SUNBURY COUNTY.

1st. To I. W. Stephenson, Upper Sheffield.

2nd. To F. A. Hubbard, Burton.

In the first prize collection some excellent St. Lawrence, Baxter, Wolf River, McIntosh, and North Star, or Dudley's Red Winter. This latter variety seems well adapted to all of the cold parts of the Maritime Provinces.

In second prize collection, some excellent Ontario and Fameuse.

QUEENS COUNTY.

1st. To George McAlpine, Lower Gagetown.

This is one of the best collections in the entire fruit exhibit, and would give any other collection shown a close run for the second place. The varieties are well selected, and the fruit shown is excellent.

WESTMORLAND COUNTY.

1st. To George L. Welling, Shediac Cape.

Good specimens of Wealthy, Bethel, McIntosh, Emperor, Wolf River, Bishop Pippin, and Gravenstein. King of Tompkins fair specimen, but without a name, and Cayuga Red Streak labeled King. Possibly this is a mere misplacing of labels.

CHARLOTTE COUNTY.

1st. To Rev. Hunter Boyd, Waweig.

2nd. To Stanley Wilson, Waweig.

The first prize collection a very good one. Mostly all good varieties. Excellent Spys, Bishop Pippins, Emperor, Rhode Island Greening, Golden Russet and Stark. The latter particularly good.

The second prize collection not so good varieties, but very fair apples.

NOVA SCOTIA.

COLCHESTER COUNTY.

Four exhibits.

1st. To J. R. Semple, Brule.

2nd. To G. M. Anderson, West New Annan.

3rd. To Robert Anderson, West New Annan.

The first prize collection was an excellent one. In our opinion, one of the very best shown from any county. All the apples shown were well colored, nearly all were of standard sorts, and the apples showed that they had been carefully selected and carefully handled.

The second and third prize collections were much alike. Each contained rather too many varieties of local value. There were good Emperor, Bethel, and Ribstons.

CUMBERLAND COUNTY.

Eleven collections shown.
1st. To W. C. Bowser, Amherst.
2nd. To R. A. Beckwith, East Amherst.
3rd. To J. Hedley Smith, Shinimicas.

In the first prize collection there was a good selection of varieties. There were fine Spys and Kings, Wolf River, and Wealthy.

In the second prize collection there was also a good selection of sorts, but the plates were a little less uniform than in the first. The third prize collection showed some fine Ribston, and some good Bethel, Wealthy, Emperor, and Golden Russet. The Kings were fine, but vry small.

Several other selections from Cumberland County were very good, indeed. The varieties shown were mostly the standard sorts, though some were of merely local value, and some wrongly named. The collection of A. W. Smith, of Nappan Station, in particular, deserves mention.

PICTOU COUNTY.

1st. To N. N. Hamblen, Durham.
2nd. To Alfred Hamblen, Durham.

There were two good collections. The first was well selected, fairly large, and well colored. Most of the varieties were of standard sorts. There were good Kings, Spys, Ribstons, Bethel, Biship Pippin, and Dudley's Red Winter, or North Star.

HANTS COUNTY.

1st. To W. B. Wallace, Newport Landing.
2nd. To Wm. Sangster, Falmouth.

The first prize collection was mostly of good varieties, though a few were weak commercially, namley, Mann, Bethel, Cabashea.

The second prize collection was a fine show of fruit, but a plate of mixed Manns and Rhode Island Greenings weakened it. Also, in our opinion, a plate of Gano, and Cox's Oranges was shown, but we were doubtful as to its being true to name. The other sorts shown were fine.

HALIFAX COUNTY.

1st stand, only collection. To G. N. McKeen, Gays River.

A nice collection of well-colored fruit, not large, but smooth, and well selected. Mostly good varieties.

ANNAPOLIS COUNTY.

1st. To John I. Phinney, Spa Springs.
2nd. To Guy C. Phinney, Spa Springs.

The first prize collection was of good commercial varieties, but not very well selected, and not well handled.

The second prize collection much the same. These collections are not what we would expect to see from the historical fruit growing County of Annapolis.

KINGS COUNTY.

1st, and Sweepstakes. To D. S. Collins, Port Williams.

We consider this the best collection of ten sorts we ever saw staged. Well grown, well selected, well colored, and probably the best ten commercial varieties for the Province generally. The varieties shown are Gravensteins, Ribstons, Blenheim, King, Spy, Stark, Baldwin, Nonpareil, Fallawater, and Golden Russet.

QUEENS COUNTY.

1st. To Edward Waterman, Pleasant River.

A very good collection of King, Hurlburt, Ben Davis, Baldwin, Rhode Island Greening, Bishop Pippin, Ribston, and Nonpareil.

SHELBURNE COUNTY.

1st. To Lewis McKay, Upper Clyde.

Rather a rough lot of apples, and not very well selected. Varieties rather poor, and some of them wrongly named. Bishop Pippin well grown, but considerable black spot. Fair Golden Russet.

ANTIGONISH COUNTY.

1st. To John Brown, Lochaber.
2nd. To John Eadie, Antigonish.

Both good collections. Some very fine fruit. The first prize collection showed good King, Ontario, Bishop Pippin, Wolf River, Baxter, Spy, Gravenstein, Wagener, and Golden Russet. Also Acker, a fine looking red apple; new to us.

2nd prize collection showed Blue Pearmeine, Wolf River, Bishop Pippin, Emperor, Alexander, Spy, Mann, and King.

PRINCE EDWARD ISLAND.

QUEENS COUNTY.

1st. To Senator Ferguson, Charlottetown.
2nd. To J. R. Moore, Pownal.

The first prize collection showed good Gano, Gravenstein, Spy, Banks, Nonpareil, Fallawater, Baldwin, Alexander, and King. The fruits were of good sorts, and a fine collection. The finest plate of Spys on the table.

The second collection showed good Ribston, Baxter, Emperor, Ben Davis, McIntosh, Wealthy, and Spy.

KINGS COUNTY.

1st. To John Robertson, Inkerman.

This is a very good collection, mostly of good sorts, and well colored. Good Baldwins, King, Alexander, Ben Davis, and Stark.

PRINCE COUNTY.

1st. To Rev. A. E. Burke, Alberton.
2nd. To D. B. McDonald, Bedeque.
3rd. To M. Graves, Alberton.

In the first prize collection were good specimens of Alexander, Spy, McIntosh, and Ben Davis.

2nd and 3rd prize collections rather poor.

We would say, in conclusion, that our judgments of the exhibits have been based on two principal points: First, the desirability of the varieties shown, from the standpoint of the county where grown; second, the excellence of the fruit itself, as specmiens of those varieties.

Under the first head, "Desirability of Variety," we have endeavoured to take into consideration the local conditions, and to give hardy varieties due recognition in counties where that quality is of first importance, as against better varieties, which are not so sure. And in the second place, "excellence of the fruit itself," we have considered the following points: 1st. Form, whether the fruit shown has a normal form for a variety. 2nd. Color, whether the fruit shown is well colored for the variety. 3rd. Uniformity, whether the specimens are uniform in all respects. 4th. Size, whether they are good size for the variety. 5th. Freedom from blemishes. We have considered as blemishes, bruises, worm-holes, the loss of a stem, and anything else that makes the fruit not a perfect apple.

We would suggest to the Board that another year more attention be given to correct and legible naming. If the Board were to furnish pins, such as were used in some of the exhibits last year, and were to require that all labels be either written legibly, or type-written on cards, and these cards placed in the pin, and stuck into the top apple on each plate, it would enable visitors to see what the varieties were, and so add greatly to the attractiveness and educational value of the exhibit.

Respectfully submitted,

R. W. STARR,
F. C. SEARS.

PROCEEDINGS

OF THE

FARMERS' AND DAIRYMEN'S ASSOCIATION.

The Thirtieth Annual Meeting of the Farmers and Dairymen's Association of New Brunswick opened at the Church Hall, Fredericton, on Tuesday afternoon, January 23rd, 1906. President C. F. Alward was in the chair, and a large number of delegates from almost every section of the Province were in attendance.

The President made the following address:—

Gentlemen, Members of this Association, and Brother Farmers of New Brunswick,—

It is with great pleasure that I greet you in this convened Association on this, our thirtieth anniversary; and our hearts, no doubt, go up in gratitude for the many blessings we have enjoyed, and the prosperous year through which we have been guided by Divine Providence.

It is now about thirty years since some of the pioneers of this Province conceived the idea of formulating in their minds, and bringing to bear on the minds of others, the great importance of convention work in New Brunswick. They, having firm convictions, with liberal minds and honest hearts, bent their energies towards that object that was to so enthuse and to educate farmers of New Brunswick that they might better understand their occupation, and be lifted from the low level in which the tillers of the soil appear to be content, to a higher plane, with nobler aspirations and indomitable courage—to put the agricultural interests in its true relationship with other callings.

The men that met in Sunbury County in 1876, and formed a convention of Dairymen and Farmers, were in advance of their times. They had receptive minds, and, by the experience of their past lives, could look forward thirty years, and, to a large extent, grasp the situation, and see the progress that would be made along the lines of agriculture. History repeats itself, and I have on the platform beside me, and in the audience in front of me, and in the Province at large, men who are in advance of the times, and are really living twenty or thirty years in the future. Men as truly giving their lives for future generations as did those men, whose memory we so dearly cherish, who organized the first Farmers' and Dairymen's Association in New Brunswick.

We should be truly grateful when we realize what a heritage was left us by our forefathers, and it ought to stimulate us to greater activity, and greater efforts, to take advantage of every opportunity lying within our reach, that the occupation and calling for which we stand may be placed in its true position, and that our sons and daughters may feel it to be one of the most, if not the most, honourable occupation that exists to-day in the civilized world.

Gentlemen and Brother Farmers, I take it that we have come together in this convention, not as antagonists, or to oppose other industries that is bringing comfort and wealth to the homes of this Province, but instead have come together to advance our common interests in this our particular calling; and in doing this, let us so co-operate, as each branch of agriculture may receive its due consideration, and those who are engaged in different lines of agricultural pursuit may receive such an impetus from co-laborers here that we will return to our several vocations with greater determination to make a success of our business.

There are some localities in this Province that are well adapted for beefing. Let us give every assistance to the man engaged in that particular branch of live stock industry, that it may be developed and put on a firm basis, so that a need may be supplied to this Province.

That in other localities, and they are many, in which dairying can be carried on most profitably, many of these places show that once a dairy interest was manifest; but somehow their interest has died down, and no other particular branch of agriculture has taken its place, and the people, through misapprehension or lack of knowledge, has thrown up the whole business and returned to some one of their former occupations—lumbering, fishing, or the old mode of farming, that of growing what they can upon their farms, and putting the raw material on the market. The lumber business in this Province has been given such an impetus of late, by the enhanced price in the foreign markets, and ready-made money is seen just then, that the different lines of farming are being neglected, and in some localities almost abandoned. But fire and axe are lessening that valuable asset to our Province, and the forests are becoming depleted, and the time may not be far distant when those that are engaged in that calling may be compelled to return to the old farm to earn their bread and butter—the farm is going to stay with us.

Would the gentlemen here assembled be astonished if I were to tell you that there are farming districts, and more than one in this agricultural Province, where nearly all the butter used is imported from Quebec and Ontario, and those particular districts well adapted to dairying? In those same localities I saw two and three year old steers selling at from $18 to $20 each. This ought not to be. I am happy to say that there are other localities in this Province that are up-to-date dairy districts, and here we find improvement, thrift, and progress. The occupation of the people are not divided, but bent towards the one object—agriculture.

No less important is that adjunct to dairying, "Pork Production," in this Province.

When we realize the amount of money paid out for pork imported into this Province we are surprised. Year before last we imported about $300,000 worth. I have not the figures for last year, or this year, but by observation would judge we have not decreased that amount much.

Then there is that branch, "Sheep Husbandry," which is very profitable, and can be carried on on a small scale in nearly every locality in New Brunswick, and made a source of income on every farm with little outlay.

Then there is the production of poultry and eggs, which has become such a source of revenue to the Dominion, and may become such to this Province, if carried along the right lines.

The importation of horses into this Province has given that branch of industry on the farm an impetus that is being felt in different parts of the country, and a marked improvement is seen. It is a fact that much can be done to improve the class of horses in this Province, and we wish to be grateful to the present Government for the interest taken and the efforts made in the very liberal and economical way they have expended the funds over which they had control to the betterment of agricultural interests.

I take it, that if this convention means anything, it stands for the uplifting and progression of each and all the different lines of farming that comes under the name of agriculture.

In conclusion, I may say that, looking over the Province at large, and even with all the drawbacks and discouragements facing the agricultural interests, we see great advancements and turning of the minds of the people towards that calling for which we stand and hold so dear.

I wish to thank the officers of this Association for their assistance, and especially Mr. Peters, for his untiring efforts to bring such a programme before us.

MAYOR M'NALLY'S WELCOME.

Mr. President and Gentlemen,—

I can assure you it gives me greae pleasure to meet the Farmers and Dairymen's Association here to-day, and, on behalf of the citizens of Fredericton, to extend to you a most hearty and cordial welcome to our city.

Your Association, composed, as it is, of the brightest minds and the leaders of that large and influential section of our population which follow farming and dairying as an occupation, should receive the commendation of the country at large, and the support of the Government, in your earnest endeavour to place these important industries on a more scientific and profitable basis than it has heretofore been.

Our weekly market, which, by the way, I believe is one of, if not the best in the Province, has of late years shown the results of the good work done by your Association. The products of the dairy, poultry, and the farm generally, have improved materially, both in quality and quantity.

Situated, as we are, in the centre of the Province, surrounded by a splendid farming country, I think the choice of the capital of the Province as the meeting place of your Association was a natural one on your part, and I can assure you, Mr. President and gentlemen, we appreciate the honour to the fullest degree.

Our city, famous as it is for its natural beauty, will, I hope, even at this season of the year, present many points of interest to you, and that you will also find our citizens "given to hospitality."

Your time, although taken up fully by the business before you, will, I hope, be spent pleasantly, as I know it will be spent profitably.

In conclusion, I wish to thank you, gentlemen, for your attention, and you, Mr. President, for the honour of addressing your Association, and hope your meetings will prove as successful in the future as they have been in the past.

HON. L. P. FARRIS,

Commissioner for Agriculture.

Hon. Mr. Farris replied to the address of welcome, and said that the members of the Association always felt at home in Fredericton. They always expect to receive a warm welcome from the citizens, and they always get it.

The interest the farmers take in such meetings as this augurs well for New Brunswick agriculture. Men who will leave their farms for upwards of a week, and journey here to listen to the addresses and discussions, must surely be in earnest, and it is very encouraging to see so many delegates in attendance.

The crops of the Province have been generally very satisfactory during the past year, and, no doubt, a few figures would be of interest. The Commissioner quoted the yields of the leading crops, as gathered by the Department of Agriculture, and was pleased to be able to say that, with the exception of buckwheat, all crops showed a substantial increase over the previous year.

The dairymen had another unfavourable year for the production of milk, and, as a result, there was a falling off in the quantity of cheese and butter made. The prices for both commodities, however, ruled high, and the returns to the factorymen amounted eo $344,026.25, or $5,000 more than last year. Mr. Farris impressed upon the delegates the importance of growing supplementary feed, such as peas and oats, in order to keep up the flow of milk in a dry season. Dairying will keep up the fertility of the soil; and in sections where no live stock is kept, where the hay and grain is sold in a raw state, it will be only a matter of time when the soil will become exhausted.

He urged the delegates to pay more attention to beef, and to endeavour to raise the best quality. He instanced the efforts of the Lieutenant Governor in this connection as worthy of imitation. It would appear from the expression of opinion among the breeders that it would not be wise for the Government to make an importation of pure bred beef animals, but the Government would do everything possible to aid this industry.

Poultry is a business that can be followed with profit by our farmers. Last year Mr. G. R. Cottrelle addressed thirty Institute meetings on this subject, and good results will no doubt follow.

The illustration orchards now number seventeen, and it is proposed to continue the work until each County has at least two acres. The trees generally made a good growth, but the severe winter destroyed many trees in some sections.

The regular series of Institute meetings had been held, with the attendance and interest good. A French series had been held, addressed by Mr. A. T. Charron, of Ottawa Experimental Farm, and Dairy Superintendent Daigle.

Agricultural education is receiving due regard at the hands of the Department. The Department will pay the transportation expenses of students from this Province attending the Truro, Guelph, or St. Ann de Bellevue Agricultural Colleges. This places scholars on as good a footing as if the colleges were located in this Province.

J. A. RUDDICK,

Dairy Commissioner, Ottawa.

Mr. Ruddick expressed the pleasure it afforded him to meet the members of the Farmers and Dairymen's Association. It was also of much benefit to him to mingle and exchange views with the men who are engaged in advancing the agricultural industry of the country. He was very sorry that he could not devote more time and attention to this Province, but the demands made upon him in his official capacity are many; for instance, he would have to leave here in a few hours for Montreal, then to Winnipeg, and then to Edmonton, and at all these places he would meet such associations as this. He hoped, however, in the near future, to be much more conversant with conditions here.

Continuing, Mr. Ruddick said: I suppose most of you know my specialty is dairying, but I give a good deal of attention to transportation, cold storage, etc., and the fruit division of the Department of Agriculture is also under my direction. I am going to confine myself to dairying this afternoon. During the past two years we have given some attention to improving the dairy herds, and I do not think I ever undertook anything in which it was harder to create an interest, considering the important issue at stake. I believe there is no line of work in Canada by which the dairy farmers can increase their profits to such an extent as by improving the production of the cows. I want to give you a few figures to show the necessity of some effort along this line. It is stated, and I have never known it to be successfully contradicted, that the average production of milk per cow in Canada is not over 3,000 pounds per year. Some think that it is a little low, but I have gone to the trouble of securing records from a number of cheese factories, and the record at one factory, during the factory season, was only 2,040 pounds per cow. Another factory record was 3,020 pounds per cow, and this was a long season, with practically all the milk supplied that was produced during the year. A great many cows in Canada must be unprofitable. Individual cows produce 5,000 pounds, and as high as 8,000 pounds in some herds which are well looked after. I know of one herd where this last figure was adopted as the standard, but that is rather exceptional. In Scotland, where I had the pleasure of visiting last summer, you will find many herds running up to 5,000 pounds per cow as the standard. I saw a herd of one hundred cows in Galloway district which averaged about that figure. The most interesting figures, however, have been gathered in Denmark. Let me give you a brief history of dairying in Denmark, as there is a lesson for every one of us in it. Fifty years ago they were growing wheat in Denmark; it was almost the sole export at that time. They had cows, but of a very poor type, not much better than the common scrub cows to be seen in our own country to too great an extent. They were of a more or less mixed character. About this time wheat became unprofitable, and they were obliged to give attention to some other line of effort. Dairying was decided upon, and a determination to improve the milch cows of the country was arrived at. The development of the Red Danish cow is interesting and instructive. This breed is found on the Danish Isles. Sires of good milking strains, of several breeds, were imported, and by persistent selection and process of weeding, they secceeded in a comparatively few years in establishing what is now a pure race, and one of the best dairy breeds in existence. The Red Danish, as the name implies, is invariably dark red in colour.

In 1880 the Danes began co-operative dairying; so you see dairying is not as old in Denmark as it is in Canada. To-day Denmark has the finest dairy business on the face of the earth. In 1896 they organized a Record Testing Association, for the purpose of testing individual cows. Records of the feed consumed, and the milk resulting therefrom, were carefully kept. The feed unit which they have adopted is a very simple and effective manner of calculating the feed consumed. At present there are 495 Associations in different parts of Denmark doing this work. When they started, their cows were averaging between 4,000 and 5,000 pounds per cow per year; some cows fell as low as 3,300 pounds. I have figures from 1,732 herds, which run as follows:—

21	herds	averaged	3,500	to	4,500	pounds.
135	“	“	5,500	to	6,600	pounds.
386	“	“	6,600	to	7,700	pounds.
428	“	“	7,700	to	8,800	pounds.
158	“	“	8,800	to	9,900	pounds.
27	“	“	9,900	to	11,000	pounds.
2	“	“	11,000	pounds.		

Some have since averaged 13,000 pounds per cow. The average to-day for the entire country is 6,000 to 7,000 pounds per cow; double the average with us in Canada.

It costs more to feed these cows, and more labour is expended, than with us here. In Denmark, they tether the animals in a certain spot in the pasture; and you would see a boy leading half a dozen cows into the field, driving a peg in a certain place, tethering the animal thereto, and then another peg, with another animal attached, and so on. Although it was early September when I passed through Denmark, nearly every cow was blanketed.

The Danes have increased their average per cow 800 to 1,000 pounds per cow, and are producing the milk at a much cheaper rate than before, as shown by the feeding records.

They also have breeding associations. As a rule, you do not find large farms; ten acres or twenty acres would be a good-sized farm in that country; and half a dozen farmers combine and buy a bull. Only cows coming up to the standard are allowed to breed to this bull, and the quality of the stock is maintained in this way. They have their pedigreed animals, but no animal is considered of value unless a record of good performance can be attached to that pedigree.

In 1904, our Minister of Agriculture authorized that we undertake testing individual cows in a district of the Province of Quebec. Seventy-two herds were tested all summer, and the results have been published in a Departmental Bulletin, which any farmer can have on application to the Dairy Commissioner at Ottawa. I am sorry to say we are not at first able to create much interest in the matter; however, last summer it was determined to inaugurate thirty-day tests. Thirty-day tests in themselves have very little value, but they served to awaken an interest in the question. Many farmers make the mistake of judging a cow as to quantity of milk when she freshens, forgetting that it does not follow that the cow that gives the most milk in May, or after calving, is the most profitable cow. It is the persistent milker that is going to have the best record for the year. The record must be for the whole year to be of value; but as a means to an end, we had to adopt the thirty-day test. They have been very successful, and we have obtained much useful information.

A Cow Testing Association has been organized at Cowansville, Quebec, and we expect to have others at Brockville, and in Prince Edward County, Ontario. There is no work that will bring greater returns to the dairyman; nothing that will inform him just what his cows are actually doing, as the individual testing of each cow for a prolonged period. If the patrons of a factory will increase the production within the reach of the factory one-quarter or one-third, then there is just that much more business for the factory; and here is where it touches the factorymen, and better, because it does not widen the area from which milk would have to be hauled. There is a great deal of competition among the managers of neighbouring factories trying to induce patrons to leave the particular factory they are supplying, and patronize another factory. If the managers would assist in these testing associations, they would accomplish much more in the way of securing milk, and do more to promote the general welfare of the community.

So far we have not paid any attention to feeding, which is a most important factor in the production of milk. We felt that if we asked the dairymen to weigh the milk, and also keep a record of the feed, they would say we were asking too much. Our testing associations require the dairymen to weigh the morning's and evening's milk, and take samples for testing on three days each month. The man who takes an intelligent interest in weighing the milking morning and evening, and having it tested, three days out of the month, will soon take an interest in the question of feeding. We believe it will pay to weigh every milking, for then a man is able to study the fluctuations in the milk from day to day, and determine the cause thereof. The more a man studies the individual records, the more he will know about his herd; and the work is very interesting, indeed, when taken up intelligently. Where this work has been taken up, there is a marked improvement in the condition of milk sent to the factories.

I do not pretend to be an authority on live stock, or live stock handling, because my work has been largely at the manufacturing end of the dairy industry. The condition of the stable, however, has a very great effect on the milk; and that is where the cheese and butter makers are interested. I am a strong advocate of cement floors in a dairy stable. It is a sanitary floor, and you can have proper drainage; nothing can find its way through to pollute the earth underneath. It is also easier to keep the building warm. Four years ago I had to build several large cheese curing rooms, and these were fitted with cement floors, and the walls were well insulated. The temperature in these rooms never fall below 40 degrees during the winter, and there was no fire whatever, while outside the thermometer ranged as low as 30 degrees below zero. Cement is a very good conductor of heat from the earth below, and the earth has a natural temperature of about 55 degrees in this country. Then, on account of having this supply of heat, we are able to provide better ventilation. A great many people seem to think that a hole in the roof provides all the ventilation that is needed. In any system of ventilation you must have inlets, as well as places for the air to escape, because no air will go out unless there is more air to take its place. There are a great many different sytsems of ventilation, and possibly the ideal has not yet been devised. There is one system which provides for outlets at the side, and bringing the air into a flue constructed in the wall, with the outside opening near the ground, bringing it up to a level with the ceiling inside. The cold air comes in a number of places, and is gradually warmed before it strikes the animals. The foul air is drawn off from near the floor, as well as at the top, because some of the gases are heavier than the air. It is important to provide against the changing of the wind, for you do not want a direct draft on the cattle. A great many stables are kept altogether too warm. You will have to look into these matters for yourself to arrive at a satisfactory conclusion.

The walls of the stables should be smooth, without crevices or ledges of any kind, or places where dust or dirt could find a lodging. You all know how difficult it is to obtain good, clean milk when the cows are milked inside; this infection comes partly from the walls, ceilings, and places where dust has been allowed to accumulate. All stables should be whitewashed inside; it makes them more sanitary, whitewash being a disinfectant. You will not have so many diseases among your cattle, such as abortion or other infectious diseases, if the stables are clean and well ventilated.

COOL CURING OF CHEESE.

A word with reference to cool curing of cheese and cold storage would not be out of place. In the cool curing of cheese, we are simply trying to imitate the conditions of the fall months, or trying to cure cheese at a temperature similar to that of Sepember and October, at which season we have been able to cure to the best advantage. I fully believe if cheese were cured at a temperature of about 60 degrees throughout the whole season, our exports would quickly increase at least one-third, as the character of the cheese would encourage greater consumption. I was very much impressed with this point in connection with the improvements made at London last year for handling our dairy products. Formerly cheese was dumped from the boat to the dock, and was allowed to remain there an indefinite period. Last season facilities were provided whereby the cheese was taken from the ship direct to cold storage rooms, and kept at a temperature of 40 degrees. Merchants in London told me that the improved condition of our cheese, partly due to these facilities, and partly to a greater use of the "cooled air" service on the steamships, had increased the consumption of Canadian cheese very considerably. In the Maritime Provinces you can cater to the West India trade. I was in Jamaica two years ago, and I was glad, indeed, to note that Maritime cheese and butter were very well thought of there. The market is improving, and you in these Provinces can supply it with much greater ease than can the dairymen of Ontario and Quebec. You must see to it that your cheese is such as the market demands, and be sure that the quality does not deteriorate. Cheese which has been cool cured will stand the tropical climate much better than cheese cured at the ordinary temperature of the summer months.

Canadian butter has made very great progress during the past season, and has made a favourable impression on the markets of Great Britain. It made more progress than during the previous five, or even ten years; and there is a great future for this trade if we only give it the attention it deserves. One of the greatest drawbacks is the lack of facilities for keeping it at a low temperature at the creameries. The age of butter is to be measured more by the temperature at which it has been kept than by the number of days that may have elapsed since it was made.

(Charts exhibited *re* cool curing scheme for creameries, and explanation thereon).

There has been a decided lack of accurate information concerning the value of different materials for insulating purposes. It was with a view of getting some exact data on this point that the Dairy Branch undertook a series of experiments during the summer of 1905. Small compartments were constructed of different materials, and different combinations of materials, and the insulating qualities thoroughly tested by allowing the same quantity of ice to be melted in each. The length of time occupied by the melting of the ice in each case determined the relative efficiency. The details of these tests will be published in a bulletin, but I shall give you a few of the conclusions arrived at.

In the first place, it was clearly demonstrated that the so-called dead air space has very little value for insulating purposes; but it is quite clear that all spaces between th studs or joists should be filled with some suitable material. As to that material, we have found nothing to equal planing mill shavings for use in a building which has a creamery, cold storage, or an ice chamber in connection therewith. The air space is useful in keeping the moisture out of the insulation, but for that purpose it need not be over one inch. A comparison was made between planing mill shavings and sawdust as a filling for spaces, which resulted very much in favour of the shavings. Sawdust is usually damp, and that destroys its efficiency, and also causes it to become mouldy or musty later on.

As a practical result of these experiments, we are able to advise a form of construction for ice chambers, cold storages, and cool curing rooms which will be efficient, and, at the same time, somewhat cheaper than what has been advocated in the past.

For ice chambers, either in connection with a creamery cold storage on the circulation system, or a cool cheese curing room, we recommend walls constructed as follows: Staggered studding, so as to make the space between the inside and outside sheathing not less than twelve inches; for the outside, one course of matched lumber, covered with two-ply best quality building paper, then finished with siding, clapboards, or shingles, is all that is required. On the inside there should be one course of matched lumber, two ply of building paper (not tar paper), then another course of matched lumber, covered with one ply of damp-proof paper. Over this there should be one inch furring strips, and another course of matched lumber. That provides two courses of lumber outside the studs, and three courses inside.

The ceiling should be finished the same as the walls, and the space between the studs and the joists filled with planer shavings.

A good floor is made as follows: If the ground is dry, all that is needed will be a layer of ashes or coal cinders, about four inches deep, over which there should be a light floor, the top of which will be a little below the bottom of the joists carrying the main floor. The main floor will require heavy joists to carry the ice, and it should be covered with galvanized iron flashed along the walls for about nine inches. Unless the galvanized iron is used, the floor soon becomes saturated with moisture, and then the heat from the earth will melt the ice very rapidly. The space between the joists and the false floor should be filled with shavings, as in the walls.

For a cold storage room at a creamery, the same construction of walls and ceiling will be satisfactory, leaving off the one inch space and extra course of lumber on the inside.

For a cheese curing room, a six or eight inch space, with double boards outside and in, and the space between the studs filled with shavings, will give very good results.

I should be pleased to send complete plans to any person who proposes to build a new cheese factory or creamery, or re-model an old one.

It would pay the dairymen of Canada to put up buildings of a more permanent and sanitary character. The cost of keeping many of the temporary makeshift structures in repair amounts to more than the difference in cost would be between the cheap building and one of a permanent character.

I am glad to be able to say that in many parts of Canada the cement floor is being very generally adopted. It is the only floor which can be kept absolutely water tight for any length of time, and this is necessary to secure perfect drainage. Without proper drainage the surroundings of any factory cannot be sanitary, or in fit condition to make butter or cheese of finest keeping quality.

When one travels abroad, he is apt to become very strongly impressed with the difference between our dairy buildings and those in use in other countries. Even in New Zealand, which is a very much younger country than this, and where dairying has only been prosecuted to any extent for fifteen years, they are far ahead of us in this respect. I believe if we had better buildings it would be much easier to retain the best class of makers to work in them.

Before I close, I wish to draw the attention of those present to the bulletins which are published by the Dairy Commissioners' Branch. We would like to extend our mailing list among the farmers of New Brunswick, and we should be glad to receive applications from any person to have their name placed on our regular mailing list. The bulletins and reports are published for your benefit; but unless we have an application from you, and receive your name, we cannot make the distribution. A postal card, or a letter wtihout a postage stamp, addressed to the Dairy Commissioner, Ottawa, is all that is necessary to secure these publications.

The President appointed the Nominating and Finance Committees.

EVENING SESSION.

The evening session opened with a violin duet by Miss Hazel Palmer and Mrs. West; the piano accompaniment was played by Miss Bessie Everett. The selection was received with great applause, and an encore had to be given. Miss Maud McKee's solo captured the audience, and for an encore rendered "Annie Laurie" very sweetly. Mr. William Walsh gave a reading from The Habitant, and in response to an enthusiastic encore, recited "Asleep at the Switch." .. .. ..

MR. WILLIAM RENNIE, OF TORONTO.

Mr. Rennie took up the question of Seed Selection and Increase of Farm Crops. At the outset he spoke of the high calling of the farmer, and was proud to acknowledge that he was one himself. He had retired from active farming operations, but that was probably the worst thing a man could do; and, after a fair trial, he would say, unhesitatingly, that the retiring business was about the poorest occupation a man could take up.

In growing crops, seed selection is one of the utmost importance; but you must also have cultivation and soil. He was in the seed business as well as the farming business, so I know this question from both ends. To illustrate what can be done in seed selection, take the aster. Formerly it was a small flower, of not overly handsome appearance. It was developed, and now we have a beautiful flower three and a half or four inches across, and all done through selecting the best seed. The best soil you can grow flowers in, and this hint is thrown out mainly for the ladies, is old, virgin soil; soil that has never been ploughed. Take the soil just as nature left it. When we speak about science, we simply mean nature — scientific farming is simply working along nature's line, assisting nature to do her work. Cultivate the soil so as to keep all the vegetable matter on the surface. This is nature's way; fallen leaves and decayed grasses, and such like, make the very best plant food. If you who want to grow good flowers, go out into the country and take some earth from alongside the roadside, or from some field that has never been ploughed, turn the sods over, and, when they begin to decompose, take a spade and mix in a little well-rotted manure. Allow the composition to germinate for two or three weeks, stirring every day, and the germs will be millions. Then you have soil that will be as nature intended it should be for the growing of plants. The germs are there for the purpose of decomposing and making available the plant food. If you are not convinced, take two flower pots, fill one with this kind of soil, and the other with the ordinary soil taken from land that has been continually ploughed. Plant a flower or plant of any kind of the same size and hardiness in each, and water them. At the end of two weeks or so, the soil that contains the decayed vegetable matter, mixed with unploughed soil, will be found to be moist, whereas the other will be found dry, hard, and cracked. There will also be a marked difference in the plants, in favour of the first pot. The first lesson I was taught by an old gardener was to throw the plow away and allow the vegetable matter to remain near the surface.

We know, by actual experience, what it is possible to do, under ordinary circumstances, so far as increasing the size of squashes is concerned. By selecting seeds from the largest squash, we have been able to bring the total weight of the product of a single vine up to within forty pounds of one ton. The foundation seed was taken from a large squash, but on a vine that produced only a total weight of something over two hundred pounds.

The wet portions of the farm require to be underdrained. In wet portions the germs will not act, as it is too cold, requiring, as they do, about 70 degrees of heat to have the most favourable condition. Underdrain in order to warm the soil.

I suppose you have some worn-out land in New Brunswick. You want this vegetable matter on the surface. The land is not worn out, the available plant food has been used; but there is a large quantity of plant food still in the soil. To meet a case such as this, there is nothing better than clover. Cultivate and harrow the field. Get some barnyard manure, if it can only be two or three loads to the acre; harrow and cultivate. If it will grow clover at all, sow some clover and a little grain, and plough it down. Any legume will take nitrogen from the air, but clover is the best.

At Guelph, I inaugurated the four years' rotation, and the results have simply been marvelous. They are still continuing that system: and you would scarcely believe me if I were to say that special machinery had to be constructed to harvest the crops; but such is the case. That course of rotation is suitable to New Brunswick. You plough down the green crop, and rolled immediately after ploughing; and the reason for rolling is, if you turn down the green crop in dry weather, it will not rot. Three things are required to rot vegetable matter — heat, air, and moisture. Consequently, you see the necessity of not ploughing deep. Capillary attraction will draw the water to the surface, where it will remain. After such treatment, your soil will be capable of growing any kind of a crop. Many years ago, in England, a chemist stated that clover was the keystone of successful agriculture. It is so to-day; you cannot do without it. It is an excellent food for animals; according to analysis, it is a good deal like bran. Clover, well handled, is the best food for horses, being a great bone and muscle builder. Timothy is more of a fattening food, and not a flesh former; it does not make such bone as clover does. Clover collects nitrogen from the atmosphere, and nitrogen must be in the soil for the crops. Nitrate of soda costs about fifteen cents per pound; but clover will store your soil with this valuable article for nothing. Clover roots will subsoil for you ;they will perform the whole subsoil. Commrecial fertilizers only act as stimulants; grow clover and you can do away with them to a large extent. The decomposed vegetable matter is called humus. Humus takes ammonia from the air, and makes it available for plant use. The great objection to hauling out manure and spreading it in the winter time is that you are liable to scatter weed seeds. My idea was to have the farm-yard manure spread on in the fall, and then have the ground ribbed. The ribs are about twenty inches wide. You can do six acres a day in this way. Run north and south when possible. Spring cultivation is simply harrowing and cultivating. Do not sow more than a bushel, and a peck of oats, and spring wheat, or a bushel and a half of barley. Seed it with clover; under ordinary circumstances, seven pounds of red, three of Alsike, and four and a half of timothy. This mixture will bring good results. Always sow the clover in front of the spouts of the grain drill.

Mr. Rennie's address was followed by a vocal solo by Mr. T. B. Kidner. A vocal duet by Miss Margaret Kelly and Mr. Kidner was admirably rendered, and was well received.

MR. DONALD INNES, OF TOBIQUE RIVER.

Mr. Innes had gained his knowledge of seed selection from actual experience; and if anything he might say to-night would be the means of starting any farmer on this work, he would feel amply rewarded for coming. The seed question is one of the greatest importance, but has been badly neglected until a few years ago. There has been great improvement in this respect, however, the past few years. The Seed Division was brought into being in connection with the Ottawa Department; samples of seeds sold by local dealers from all over the Dominion were collected and tested, and the results showed that farmers were paying for a great many weed seeds, and that the *bona fide* seed was of very low vitality in many cases. We should not blame the seedmen for that condition of things, but rather the farmers, who wanted a cheap grade of seeds, or, rather, what they thought was cheap seed; for, as a matter of fact, they were paying two prices for the inferior seed. They have realized this, and now demand the best available. The Canadian Seed Growers' Association sprung from these efforts of the Seed Division, and also from the work of the Macdonald-Robertson Competition. Mr. F. W. Brodrick is the Maritime Superintendent of the Association, and I am very sorry he is not with us to-night. The membership from this Province is only nine at present; but we do not wish it to be confined to a few, and any one who is willing to take up the work can become a member. Before I began the selection of big heads, I always used a Chatham mill, and the results were fairly good; but you could not tell whether a big kernel was from a big head or a little one. The same thing holds good in the vegetable kingdom as the animal—like will produce like. The first year we commenced with oats and White Fyfe wheat, and went through the whole field, picking about twenty-five pounds of the best heads, and from that quantity I think we had eighteen pounds of good seed after threshing. This we sowed on a quarter of an acre of ground, and picked the large heads for the next year from the crop. The general increase of these two crops illustrated the great benefit of selection. From the first year to the third, the general increase in the case of wheat was thirty-nine per cent., and in the case of oats the increase was thirty-four per cent. Good seed will do better than poor seed, if the cultivation is poor; but in order to get the best results you must cultivate carefully. The fourth year there was a general competition all over Canada, and the seed from the best quarter of an acre would win a prize of $100. I am not going to say who won that prize; but the increase on our quarter of an acre, from the first year to the third, was something about four bushels and some pounds, which would make an increase in the farm crop per acre of seventeen bushels. If we can make that increase on our farms (the average was twenty-seven per cent. for the whole Dominion), there are great things ahead for Canada. From the official figures, there are 180,000 acres of oats in this Province; and if the increase on each man farm is only one bushel per acre, there would be 180,000 bushels more oats grown than there is to-day. But the extra average, with ordinary good care, should be five bushels per acre. The average per acre in our Province is only twenty-nine bushels; it should be at least forty. The average yield on our place was thirty-four bushels per acre.

A Delegate: Are there not some other things needed besides selection; how do you ripen your seed?

Mr. Innes: We found that wheat and oats differed. The wheat we allowed to become very ripe; but we found it best to cut oats on the green side.

WEDNESDAY, January 24th.

MORNING SESSION.

BEEF PRODUCTION.

Mr. R. Robertson, Superintendent of the Maritime Experimental Farm, took up the question of beef raising in New Brunswick. It had never been Mr. Robertson's practice to make a set address, but rather to provoke a good discussion, and in that way he thought more benefit resulted. There seemed to be an impression that he was antagonistic to beef riasing, due, probably, to his being such an ardent dairyman. But he was not by any means an enemy of the beef animal, and believed that certain sections of New Brunswick could produce excellent beef. He impressed upon the audience the vital importance of the farmers of this Province, of Eastern Canada, feeding their raw material; he insisted upon them being manufacturers either of beef or dairy products, and pork. This is the only way we can keep our farms fertile and make a profit. "Speaking about commercial fertilizers," said Mr. Robertson, "I am inclined to think Mr. Rennie's verdict is too sweeping. In Ontario, it might do to discard them altogether; but in the Maritime Provinces the seasons are somewhat shorter, and we have to make a rapid growth in a short time. Commercial fertilizers should be used to supplement and help out barn-yard manure and clover. Commercial fertilizers cannot be made to take the place of stable manure, if the soil is exhausted. If good crops are to be produced, the land must contain humus, and there it is that live stock comes in. When the land is not producing crops as large as formerly, it is generally because the humus is being used up, and, by putting commercial fertilizers on that piece of land, we stimulate the using of this humus, and thus jump from the frying pan into the fire. There is as much need of beef production as dairying in New Brunswick. One reason some people like to make beef, is because they can do so with less help than it takes to run a dairy, less work. Then, again, the locality a man is situated in may be better adapted for beef than dairying. A man situated near the Sackville marshes can engage in beef, and make a success of it. A great many of the animals in New Brunswick that are turned into beef are not at all suited for the purpose. Successful beef raising will depend largely upon the animal, and largely, also, on the man that is feeding that animal, on the man who is raising crops for that purpose. I doubt very much if anyone can make money in beef or dairying if he has to buy large quantities of the feed at market prices. His success will depend upon his ability to grow cheap crops to a large extent. Last summer I travelled through the best parts of Ontario, Quebec, the Niagara district, down through Texas, and into Oaklahama, and I was struck with the fact that all this section of the continent was mainly used for beef production. How easy it was for a man to make beef under such conditions. The man in the same business in this country must be a better man, a man of more ability and brains, because he has adverse circumstances to contend with. But we have the markets right at our door, while the big cattle raisers of the West and South have large transportation expenses and commissions to meet. A man who is feeding beef can use much of the rough stuff that is about his farm. Every year we have been able to buy on the open market in the fall, and taking a chance of selling in the spring, charging the market price for everything, making no credit for the manure, but allowing the labour to offset that, and we have always come out with a margin of profit on the right side. Last year the profit per head was $4.91. Last year we charged $10 for hay, and $8 the previous year. In 1904 the profit per head was $2.07, in 1903 it was $3.41, in 1902 it was $17.77, in 1901 it was $5.35. I buy steers at two or three years old for what they are worth, or what I am willing to pay for them. Beef animals will use up feed that has not a market value, and it is possible to raise a steer largely on such stuff. We have been carrying on experiments of raising calves from birth to the block in different ways. One lot we fed all they could eat, not pushing them, and had them ready for the butcher at twenty-four months. We took another lot and fed cheaper, and finished them a year older than the first lot, that is, put them on the market at three years old. We were able to get, on an average, for the first lot $5.50 per cwt. live-weight. At these figures there is a fair margin of profit. The other lot, that took three years to fatten, cost $6.10 per cwt. If you raise the best quality of beef, you need not worry about finding a market. Finished at two years old, the first lot cost us five and a half cents per pound; steers of the same quality carried over a year longer cost us six and three-fifths per pound. You can reckon what steers finished at four years old would pay in the way of profits.

Mr. Wilmot: Can you sell by live weight? We cannot here.

Mr. Robertson: Yes, we can; and do. It is a very great mistake, from the feeder's or seller's point of view, to allow the butcher to decide what your animal is worth. The man who has fed the animal, and has watched him develop for a couple of years, should be a better judge of what he is than the butcher, who has seen it for the first time. You should insist upon selling by live weight.

Mr. Bliss Fawcett: The beef talks at our conventions have usually been given by Ontario men, who do not know the conditions we are working under. At Amherst, Mr. Grisdale, of the Experimental Farm at Ottawa, came down and told us the results of his experiments with beef animals at that place. There are few of us who can tell what it costs to raise a calf from birth to the block. Mr. Grisdale gave us his experience, and it was against the beef industry. He told us the cost to raise a year-old calf was 5 1-2 cents per pound, at two years old it was 8 1-2 cents per pound, and at three years old it was 17 1-2 cents per pound. If we get 4 cents to 4 1-2 cents, we are getting good prices. It is hard to figure out a profit with these figures. I have wondered how we have lived, if we have been losing about 13 cents a pound. How have we managed to live? Pork did not make up the difference last year, nor did butter; we did not make it up on wheat, because we buy our flour in Ontario. The conditions in Ontario must be very different from ours, if they can do as we have been told. They raise their animals on high-priced feeds,, and at three years old it costs them 17 1-2 cents per pound. That is not the method we follow here. We give them new milk for a month, then we put them on skim milk, and turn them into the pastures, run them through the winter on hay, turnips, and a little milk. Then in the summer these steers are turned out on the commons, which make good grazing, or into the woods, where the flies will not bother them, and where the grazing is also good. On the marshes and pastures they do not gain as much as on the commons and in the woods. We have thousands and thousands of acres of such lands in New Brunswick, which afford good pasturage from June to November. They are put into the barn again in winter, and fed on hay, which costs us $6 or $7 a ton, and turnips; it is wonderful how steers will thrive on a very small ration of turnips. They are turned out again in the spring, and run till fall; and our steers grow up in that way, and we do not feel the cost. Fifteen or twenty years ago we exported to the Old Country two or three hundred steers, and we realized $110 each in the Scotch market in October, when our beef is lowest. These steers were raised from Shorthorn cows, and the farmers had fine dairies as well. If we can get such a cow as Mr. Ruddick talked about yesterday, the general purpose question will be solved. Select the cows from your herds that are good ones, weed out the poor ones, and we will have both excellent milkers and good steers on our farms.

Mr. Frank Trueman, of Point de Bute, spoke briefly. He was a beef raiser, and had made a good living therefrom. He looked forward to the day when the general purpose cow would be generally recognized.

Mr. Geo. E. Baxter said he would like to hear from some Carleton County farmers, who make their farms pay, and who do not have such grazing lands as Westmorland.

Mr. Strong said he had made his farm in Carleton County pay, and had followed lines which would be generally condemned by this meeting. He was selling off the raw material. I also keep a fair stock, and raise quite a few steers, and a number of horses. I have made money out of beef, but it is more of a by-product with me. June beef in Carleton County brings about five cents, live weight; and I try to place my beef on the market then; at this season of the year the price, dead weight, would not be more than that.

Prof. Cumming thought Mr. Fawcett must have misconstrued Prof. Grisdale's figures in regard to raising steers. He knew Prof. Grisdale very well, and he was a very careful, reliable man. Mr. Fawcett must have made some mistake in saying it cost 17 1-2 cents to feed calves until ready for the block. The average is 8 cents or 9 cents. You can sell steers which cost you 8 cents per pound of gain at 5 cents, and make a profit. Anybody that will think about it can see that it is the lower price you pay for the carcass that makes this possible. Buy a steer weighing 1,000 pounds, at 4 cents per pound, and feed it through the winter; the original cost is $40. It makes a gain of 300 pounds at a cost of 8 cents; the total cost of your steer is $64, and he weighs 1,300, which we sell at 5 cents. This would bring you $65 for the steer. However, we consider it poor business to get only one cent per pound; we aim to get 1 1-4 cents.

At the Fat Stock Show, held in Chicago, they kept records of what it cost to produce show animals at different ages. An animal in real good fit cost about 4 cents per pound; that same animal carried a year would cost 4 cents more, or 8 cents in right good fit. Carried to two years would cost 4 cents more per pound.

Prof. Cumming emphasized the question of economical feeding. Experiments were conducted at Guelph a short time ago. One lot of steers were fed on a ration of one pound of meal to every one hundred pounds live weight. A second lot were started at one pound of meal, and worked up to two and three pounds, so that during the whole experiment they were not fed more than one-half to one hundred pounds live weight. In every case the profits were decidedly larger where the cheaper ration was fed. Feed more rough feeds, and not so much grain ration.

Mr. Henry Wilmot: There are two things which enter into the matter of successful beef production—the cost of feed and the price of the finished article. I do not see how farmers can afford to import feed and make a profit out of the beef. I have raised the grain and roots I fed on my own farm, and have had a good deal of difficulty in making a profit. We would like to sell by live weight, but the butchers refuse to consider it. A great deal has been said about the general purpose cow. I have been using Shorthorn bulls on my own farm, and I have never had occasion to change my practice. The grade cattle from the Shorthorn bull we have found to be very satisfactory.

Rev. T. Hunter Boyd presented the report of the Nominating Committee, which recommended the following officers for the ensuing year:—

President—Donald Innes, Tobique River.
Vice-President—F. E. Sharp, Midland, Kings County.
Recording Secretary—B. M. Fawcett, Sackville.
Corresponding Secretary—T. A. Peters, Fredericton.
Treasurer—Harvey Mitchell, Sussex.

COUNTY VICE-PRESIDENTS.

Restigouche—J. E. Stewart, Dalhousie.
Gloucester—P. J. Power, Bathurst.
Northumberland—William Murray, Doaktown.
Kent—James Lawson, Main River.
Westmorland—Frank Trueman, Point de Bute.
Albert—S. S. Ryan, M. P. P., Coverdale.
St. John—Frank Hamm, St. John.
Charlotte—R. Richardson, Waweig.
Kings—L. T. Crawford, Kingston.
Queens—George McAlpine, Lower Gagetown.
Sunbury—H. H. Smith, Blissville.
York—N. E. Hoyt, Prince William.
Carleton—James Good, Jacksonville.
Madawaska—Rev. Father M. P. Babineau, St. Jacques.

The report recommended that the County Vice-Presidents present a brief report of the condition of agriculture in each County at the annual meeting of this Association, as was formerly the custom. Such reports to be not longer than could be attended to allowing five minutes to each County.

Mr. Geo. E. Baxter regretted that the farmers of the Province did not attend the convention in sufficient numbers to permit the officers being elected independent of Government officials. He thought there were too many Government officials holding offices in the Association.

A delegate suggested that Mr. Baxter take one of these offices, but Mr. Baxter declared he did not want the job.

Mr. Peters said he was perfectly willing to resign in favour of someone else. He did not receive a cent for his services, which entailed a large amount of work.

Mr. Bliss M. Fawcett thought it was a good thing to have the Government at the back of the Association, and to have the officials give their time and attention to the work without it costing the Association a cent. From the point of view of the farmers, it was an excellent arrangement. Hon. Mr. Farris and Mr. Peters were very successful in obtaining the co-operation of the Dominion Department of Agriculture. If the Association ever found itself embarrassed financially, no doubt Mr. Farris would see them through.

Ex-President Alward testified to the assistance and encouragement he had always received from Hon. Mr. Farris and his Department. He thought it well to have the officials of the Department actively interested in the work of the Association.

Rev. Hunter Boyd spoke along the same lines as Mr. Fawcett, after which the report was adopted.

AFTERNOON SESSION.

Mr. Donald Innes, the newly-elected President of the Association, took the chair at the opening of the afternoon session amid loud applause. Mr. Innes thanked the delegates for their cordial exrpession of good will, and felt highly complimented on the honour conferred upon him. He felt it was not so much an honour to him personally as it was to the County and section he represented. All his life he had been a farmer, and all this time the interests of the farming community had been uppermost in his thoughts. It is wise for farmers to cooperate in such associations as this, united not for any aggressive purpose, but for the general wellbeing and advancement of the class. The farming industry is the foundation industry of every country. What would happen if the farmers went on strike for one year?

In conclusion, he asked that the support which had been given the late officers be continued in the case of the officers elect.

THE DAIRY OUTLOOK IN NEW BRUNSWICK.

BY HARVEY MITCHELL.

The farmers and others will appreciate the importance of this industry when I state that the output from the dairies of Canada last year amounted to eighty millions, and the exports of cheese and butter to over thirty millions of dollars. It is pleasing to note the advancement dairying has made in the Province during the last ten years. The value of the output from our factories in 1896 amounted to only $76,151.30, while last season it reached the sum of $344,026.25.

The development of the industry, however, has not been general throughout the Province, while in the Counties of Kings, Madawaska, and certain sections of Victoria, Queens, and Westmorland, the factories are increasing their business; in other sections, particularly in York and Carleton Counties, where at one time the factories received considerable support, the business is either going back, or is at a standstill.

It might be well to consider briefly the conditions as they exist in the sections referred to. All will admit, that so far as natural conditions for dairying are concerned, the Counties of York and Carleton cannot be excelled, and are not to be compared with the other Counties mentioned; yet we find the factories, in many cases, are not a success. I believe one of the chief causes for this is the lack of co-operation on the part of the farmers. While the factory owners are willing and anxious to conduct their business on the co-operative system, they find it impossible to get the patrons to all agree on any one system; and you can find different factories in this section where a part of the farmers have their milk manufactured on the old pooling system; others sell their milk at a certain price per hundred pounds; while the balance sell their milk at a stated price per pound for the butterfat it contains. Factories conducted in this way can never be a success; and in such sections we will always hear the cry, "Dairying don't pay;" and the farmers will continue to look for that Will O' the Wisp, the general purpose cow, when, as a matter of fact, what they need is to co-operate in the running of their factories, divide the proceeds according to the percentage of butterfat contained in the milk, and improve the herds they already have by judicious breeding and feeding.

It is true, Carleton County depends largely upon the hay and grain that is sold; and in a great many cases we find the farmer trying to keep the clover out of his land, as it means a lower price per ton for his hay. We heard the statement made from this platform last evening by Mr. Wm. Rennie, a gentleman who has had practical experience to back up his statement, that clover is the keystone to successful agriculture. You can draw your own conclusion as to whether those farmers are conducting a wise course.

In the sections of this Province where the dairy industry is flourishing, the factories are operated on the co-operative system. The patrons unite in getting their milk to the factories, in having it manufactured at a stated price per pound; and the output of the factory is sold by a salesman, whose special duty it is to keep posted in regard to the markets, secure the highest prices, and divide the proceeds among the patrons according to the percentage of butterfat contained in their milk.

We have splendid markets for our cheese and butter. The output last season went largely to the local markets, Eastern Nova Scotia, and the West Indies; a small portion of the make went to Great Britain. The average price per pound during the season was 10.61 cents, and butter 21.84 cents; while the average price in Montreal was 10.50 cents for cheese, and 21.50 cents for butter. It is encouraging to note that we realized better prices than our friends in the West.

In regard to the future, statistics show a great shortage in the stocks of dairy produce in store, as compared with last year; and with the improved facilities now afforded for the handling of our cheese and butter, I can see no reason why we should not look forward to good prices this year.

If we, as a Province, expect to realize what we should from this business, there must be more of a co-operative spirit on the part of the farmers, more attention given to the cost of producing the raw material, and our breeders of pure bred stock must be in a position to furnish our dairymen with a record of proudction for the animals they wish to dispose of for the improvement of our dairy herds. It does not always follow that an animal with a long pedigree is going to improve the production from our dairy herds; but what we want is a record of production along with the pedigree; and it matters not whether it be a Shorthorn, general purpose, or some of the dairy breeds, if the owner can show a reliable record; that is the animal our dairymen will be after.

MR. N. S. DOW, OF WOODSTOCK.

Mr. Dow led in the discussion of Mr. Mitchell's address, and viewed the subject more from the standpoint of the maker than the patron. The statement had been made by many farmers that dairying will not pay; and they have produced arguments that made you feel there was something wrong. They have shown where dairying has been discarded in certain sections for lines more profitable. I have had to confront such statements as this many times in my experience. There is no good thing in this world that has not received a lot of stiff opposition. Has there ever been any great enterprise carried on, or any institution of a high character established, that has not received stiff opposition from a large number of the people? For instance, here in this city, there is stiff opposition to the establishment of a sewerage system. I remember, years ago, in Woodstock, there was a similar outcry on the same subject, and the same arguments against sewerage that were used in Woodstock years ago, are doing service here to-day. There has been so much criticism of the Bible, that one wonders how that book has stood the strain. There is a good future for the dairy business in Canada; the fact that some sections have discouraged it, does not disprove the fact. Mr. Mitchell spoke about Carleton County, and as I know every bye-road in that County, naturally I was interested. There are certain sections in that County that are not dairying to-day, and some farmers say there is no money in it; but that does not prove that dairying does not pay in those sections. In my business, last year we handled more goods, taking into consideration the butter received from private dairies, than we have since our factory started, with the exception of one year. I want you to realize that because some people in sections of Carleton County say dairying does not pay, it does not follow that such is the fact. The reason why dairying does not pay with a great many people is because they are not willing to change when there comes a change in conditions. Many business concerns have failed because there came a time when conditions changed, and the managers were not able or not willing to meet the new conditions, and adapt themselves to the same. A number of years we collected all the milk there was—there were no hand separators at that time. They began to come in one by one, and we opposed them vigorously. Why did we do so? Not because we considered they would not be a benefit to the people, but because we saw they would break up the system we had perfected. But the people bought hand separators in spite of us, and we were compelled to adapt ourselves to new conditions, and go out and buy the cream. Our business is flourishing, because we have adapted ourselves to conditions the farmers have made.

Mr. Mitchell pointed out that dairying has gone back in Carleton County, but I do not think to such an extent as he thinks it has. So far as the quantity manufactured in factories is concerned, he is perfectly correct; but there is a very large quantity made on the farms. On the whole, there is as much made as there was five or six years ago.

There is another point. In Carleton County we are very close to Aroostook County, which is across the line. At certain times our young people can go over there and get big wages; consequently, if we want help, we haveto meet the wages they can get in Aroostook County. As a result, many of our farmers are selling their raw product off the farm. They acquire a large tract of land, get labour-saving machinery, and sell the product. Because of the rich land we have, they are able to do this. It is only a matter of time, however, till this system must bring its inevitable result.

There is one thing that is going to work against us in the future —our young people are going away from the Province. If our farmers would stop grumbling about the drudgery of the farm, and what a hard lot is that of the farmer, the young people would not imbide these ideas, and would be more content to work the soil. We see people of the cities living what appears on the surface to be a life of ease and contentment, but we know not the worry and heartache that go on every day to keep up that appearance in many instances. When these people visit the country, they are not in a normal condition, but are in holiday attire, and in a holiday mood; and our young people are carried away with the appearance, and cannot see below the surface. The city boy may drive a very nobby turnout, and the country boy may drive something not so nobby; but the difference is that the city boy's rig is only a hired one, and he may have had considerable trouble to acquire the price, while the country boy is driving his own turnout.

Mr. F. E. Sharp: I would like to ask Mr. Mitchell if it would be better for ten good, progressive farmers to unite and operate a skimming station than for each individual to buy a hand separator, and send the cream to the factories.

Mr. Mitchell: It would all depend upon the local conditions. In sections such as the one Mr. Sharp comes from, I think the skimming station would be the better way, as it is already established, and is giving satisfaction. I cannot see where anything could be gained if they adopted the cream gathering system. If the hand separator is adopted, it is necessary to keep it scrupulously clean. Sometimes the cream is not sent promptly to the central factory; it is allowed to stand in places where it becomes contaminated; and it is hard to make a good article of butter when the cream is not absolutely pure.

Mr. Rideout thought that Carleton County should engage in the dairy business more extensively. The co-operative system has never been established in the way it should be; the system is all right. Successful farmers are dairymen. Pigs go along with the dairy, and clover is the food for pigs. He gave as a reason why dairying did not flourish in Carleton County that the high wages paid in the neighbouring County of Aroostook drew the young men away, and there was not sufficient help to look after the cows.

Mr. C. F. Alward was referred to by Mr. Mitchell as the manager of one of the most successful cheese factories in the Province, and he thought Mr. Alward could give the delegates some valuable advice.

Mr. Alward said he had the pleasure of visiting some of the factories in the Eastern portion of the Province of Ontario, where cheese and butter is made. I was impressed with the fact that the bulk of the factories were run on the pooling system. We have got ahead of such a way of doing things in this Province, in Kings County, at any rate; and I had the audacity to tell them, at some of their Institute meetings, that they were behind the times. I consider the most equitable system for dividing the proceeds at the factory to be that recommended by Prof. H. H. Dean, of the Ontario Agricultural College, that is, to add two per cent. of casein to the percentage of butterfat contained in the milk. By this system the patron receives, as near as it is possible to fix it, the amount of money realized from the cheese that is made from the milk. Unless co-operation is adopted, it is not possible to make the greatest success possible. The hand separator is finding its way into our district, and we do not relish that any more than did Mr. Dow; but we are preparing to meet the changes its introduction will entail.

As Mr. Mitchell has pointed out, the great difficulty with the hand separator lies in the fact that it must be kept absolutely clean. It must be washed after every using. Then, the cream is apt to be allowed to stand around, and the probability is a good deal of it will reach the factory in a bad condition, and this will cut down our profits.

It has been stated that we cannot control the market. If we put nothing but the best quality on the market, we will have no trouble of disposing of our make. The buyers know that we send nothing but an A1 article from our factory, and they come to us in flocks. We get 26 cents per pound for our butter right at the factory. At present we pay $1.25 to $1.30 per hundredweight for milk.

Mr. Alward referred to the Carleton County farmers placing their products on the market in a raw state, which he thought was a great mistake. In Eastern Canada, we must look to our live stock to keep up the fertility of the soil. Carleton County could outstrip any County in the Province, so far as live stock raising is concerned. Kings, which has not the best soil or the best conditions for dairying, makes almost as much cheese and butter as the balance of the Province put together.

He did not think a farmer had worked out his proper destiny unless he left, as a heritage to his children, the farm in a better condition than he found it. Interest the children in the work of the farm, and they will not be so anxious to go West. It is only the speculator that makes money in the West without a great deal of hard toil, harder than we in the East have to toil. Place some responsibilities on the shoulders of the boys; make them feel that they are a part of the management of the farm; allow them to do some of the buying and selling; unhampered by the parental oversight; and the question of keeping the boys on the farm will work out itself.

Mr. W. W. Hubbard said, if the dairymen wanted to make the most money from their cows, they must keep an individual record of the milk produced. He thought a cow could be evolved here as had been done in Denmark, an animal that would give a good flow of milk, and, at the same time, raise a calf that will make good beef. It is not a question of opinion; it is a question of dollars and cents. By weighing and testing the milk from each individual cow, you can tell just exactly what each animal is doing; you can note the fluctuations, and you will be able to find out the reason therefor. You have also to solve the question of what kind of cows is best suited for your needs.

The report of the Finance Committee was presented by Mr. Frank Trueman, as follows:—

Balance on hand from last year	$ 14 59	
Members' fees	94 00	
Government Grant	200 00	
		$308 59
Expenditures during the year		170 64
Balance in Treasurer's hands		$137 95

OFFICERS AND MEMBERS OF THE FARMERS' AND DAIRYMEN'S ASSOCIATION FOR 1906.

President—Donald Innes, Tobique River.
Vice-President—F. E. Sharp, Midland.
Recording Secretary—Bliss M. Fawcett, Sackville.
Corresponding Secretary—Thos. A. Peters, Fredericton.
Treasurer—Harvey Mitchell, Sussex.

Vice-Presidents for Counties.

Restigouche—Jas. E. Stewart, Dalhousie.
Gloucester—P. J. Power, Bathurst.
Northumberland—Wm. Murray, Doaktown.
Kent—Jas. Lawson, Main River.
Westmorland—Frank Trueman, Point de Bute.
Albert—S. S. Ryan, M. P. P., Coverdale.
St. John—Frank Hamm, St. John.
Charlotte—Robt. Richardson, Waweig.
Kings—L. P. Crawford, Kingston.
Queens—Geo. McAlpine, Lower Gagetown.
Sunbury—H. H. Smith, Blissville.
York—N. E. Hoyt, Prince William.
Carleton—Jas. Good, Jacksonville.
Victoria—David Currie, Tobique River.
Madawaska—Rev. M. P. Babineau, St. Jacques.

Anderson, Albert, Sackville.
Alward, C. F., Havelock.
Babbitt, G. N., Fredericton.
Barry, J. H., Fredericton.
Bell, J. A., Fredericton.
Boyle, John, Fredericton.
Barker, W. G., Kingsclear.
Baxter, Geo. E., Andover.
Blair, Samuel, Stanley.
Bull, Chas. P., Woodstock.
Boyd, Rev. T. Hunter, Waweig.
Chestnut, C. F., Fredericton.
Crockett, Jas. H., Fredericton.
Chestnut & Sons, Fredericton.
Colter, T. H., Fredericton.
Christie, Wm., Kintore.
Clements, F. deL., Fredericton.
Cameron, William, Fredericton.
Carter, T. Edwin, Bathurst.
Crawford, L. T., Kingston.
Dickson, J. H., Fredericton.
Daigle, L. C., Moncton.
Donovan, J. M., St. John.
Dudley, Dr. W. M., Blissville.
Edgecombe, F. B., Fredericton.
Everett, A. E., Fredericton.
Everett, Frank A., Fredericton.
Edney, John, Fredericton.
Edwards, J. A., Fredericton.
Emery, Hamilton, Jacksonville.
Flemming, J. H., Fredericton.
Fawcett, Bliss M., Sackville.
Fairweather, Edgar H., St. John.
Farris, Hon. L. P., White's Cove.
Floyd, J. A., Norton.
Giles, C. H., Fredericton.
Gilman, J. C., Fredericton.
Griffiths, J. D., Stanley.
Good, Jas., Jacksonville.
Hall, C. W., Fredericton.
Hodge, Jas., Fredericton.
Hawthorn, Jas. H., Fredericton.
Hoyt, N. E., Prince William.
Hubbard, W. W., St. Jahn.
Innes, Donald, Tobique River.
Inch, Dr. J. R., Fredericton.
Jewett, H. C., Fredericton.
Jewett, Arch., Fredericton.
Johnston, L. W., Fredericton.
Jensen, A. J., Salmonhurst.
Lemont, J. R., Glassville.
Lawson, Jas., Rexton.
Mack, R. T., Fredericton.
Mitchell, Harvey, Sussex.
Murray, William, Doaktown.
Miller, J. J., Bathurst.
Mersereau, Edward, Blissfield.
Machum, Wm. A., Pollyhurst.
McFarlane, Walter, Fredericton.
McKenzie, P. D., Fredericton.
McMurray, J. F., Fredericton.
McCaffrey, J. J., Fredericton.
McDonald & Pheeney, Fredericton.
McLeod, J. M., Hartland.
Niles, Thos., Fredericton.
Osborn, W. J., Fredericton.
Phillip, Andrew, Kincardine.
Peters, Thos. A., Fredericton.
Parlee, W. K. C., Fredericton.
Randolph, A. F. & Sons, Fredericton.
Robinson, F. P., Fredericton.
Ross, A. W., Douglas.
Roberts, Chas., Red Rapids.
Robinson, Lindsay, Glassville.
Rideout, W. C., Simonds.
Shea, D. J., Fredericton.
Shute & Co., Fredericton.
Stephenson, I. W., Sheffield.
Smith, Milton A., Hoyt.
Sharp, F. E., Midland.
Swim, Jas., Doaktown.
Smith, J. Heber, Hampton.
Smith, H. H., Blissville.
Thomas, A. Duncan, Fredericton.
Tibbitts, R. W. L., Fredericton.
Tafford, Wm., Centreville.
Tilley, J. F., Woodstock.
Trenholm, Hiram, Sackville.
Trueman, Frank, Point de Bute.
Weddall, J. J., Fredericton.
Whitehead, W. T., Fredericton.
Wilson, Hon. Wm., Fredericton.
Wilmot, A. B., Fredericton.
Wilson, R. D., Fredericton.
Webb, W. J., Centreville.
Whyte, Wm., Doaktown.
Waltham, Sylvester, Richibucto.
Wilmot, Henry, Oromocto.

EVENING SESSION.

AGRICULTURAL EDUCATION.

BY M. CUMMING, B. A., B. S. A., PRINCIPAL OF TRURO AGRICULTURAL COLLEGE.

Had this subject been discussed a few years ago before an audience such as this, it would not have created the interest which I know the people of to-day take in it. From conversations I have had since coming to this city, I know many of you are keenly interested. It is within comparatively recent years that interest has been taken in industrial education of all kinds. The colleges and schools grew out of the Church of the middle ages, and the education imparted was naturally of a scholastic nature. It remained for the last part of the nineteenth century to establish schools and colleges of applied science in its various branches; and the school for agriculture has been the latest to come to the front. The Agricultural College at Guelph, in the Province of Ontario, has been in existence, and has been doing good work for thirty years; and it was the only institution of that nature which existed for a considerable period. Some twenty years ago a movement was made in the Province of Nova Scotia, which resulted in the establishment of a college for agriculture; but it was not a very large affair, and was not assisted to any extent. A School of Horticulture was started at Wolfville, and was conducted along the same lines. In both cases, the man in charge was required to teach every branch of agriculture and applied science, and it could hardly be expected that any startling results would be obtained. However, there is now a general interest in this subject, especially due to the efforts of Prof. Robertson. As a result of his efforts a movement was started in Nova Scotia, which has resulted in an institution, which, I think, is fairly well equipped; which I believe will do much, not only for Nova Scotia, but for the adjoining Provinces. Elsewhere the movement has been advancing. In Manitoba they are erecting a magnificent building, which will be thoroughly equipped for carrying on the work of an agricultural school. In Quebec, near Montreal, Sir Wm. Macdonald is erecting a similar institution, which will be under the presidency of Prof. Robertson. So we have at the present time, or shortly will have, four agricultural colleges in Canada. Practically every State in the Union has an agricultural college, and most of them are doing excellent work. In America the development has been confined to the last twenty-five years; in England and Scotland, more particularly within the last year or two, great development has taken place along this line.

In the earlier period of our agriculture, there was no call for agricultural institutions such as we now have, largely for the reason that it required very little intelligence to farm virgin soil. But as the land is cropped and cropped, agricultural colleges and institutions, such as this Association, become a necessity. A man may become a successful agriculturist without taking a college course; there are many practical men who have become well versed in the science, and who have never attended a college; but the college is the quickest and best mode of procedure.

Allow me to tell you a little of what we are doing at Truro. The college has been organized, as far as possible, along the lines laid down at Guelph. The course taken by the larger number of students is of two years' duration, at the end of which time a diploma is given. At Guelph there is also a four years' course, and a certain percentage, about fifteen or twenty, of the students continue on this course. The course during the last two years was of a purely scientific nature, and is not relatively as practical as two years preceding. We have always taken the stand at Guelph, that the two years' course is the one for the average farmer's boy, and statistics show that ninety-five per cent. of those who have taken that course have returned to the farm. The course at Truro will be the two years' course; but should there be any students desiring to take the four years' course, and have the right to place B. S. A. after their names, then they will be allowed to go to Guelph, and enter that institution on the same footing as if they had put in the first two years there.

We have spent a good deal of time in developing the short courses, for experience has shown that it is the most practical way for the average farmer to acquire a good working knowledge of agriculture. The short course is intended to meet the needs of the farmer who cannot leave his farm for any length of time. Last year the two weeks' course was attended by an average of sixty-eight, but some days as many as two hundred were present, made up of farmers, and farmers' sons, ranging from twenty to seventy years of age. There were ten from Prince Edward Island, five from New Brunswick, and the balance from

Nova Scotia. We are anxious to make these courses as practical as possible, and employ the most practical men available in Canada. The Department at Ottawa has helped us out considerable, and we have also a couple of men from Guelph; and, with the aid of our local men, we think the course is as good as can be got. Mr. Rennie will take up farm management; and those of you who heard Mr. Rennie yesterday, know that he is a very capable man. This year the course opens on 1st February, and close on the 15th. Live stock will play an important part at this show. We have a live stock pavillion, with a fifty-foot ring, into which animals will be placed to be scored. Students will be asked to go in and pick out the best animal, and be able to give reasons for everything he decides. This is not done with a view of developing a corps of expert judges, but rather to bring out the comparative excellence of the animals from an educational point of view.

Horses will also come in for due attention. It is important that the average farmer should know something about a horse. People are influenced in their judgment of a horse largely by what somebody else has said about the animal. I have known a splendid horse to come into a district, and somebody spreads a rumour that he has this or that disease, or blemish, and the usefulness of the horse is gone to a large extent, because people will not take their mares to him. A farmer should be able to judge for himself as to the quality and merits of a horse. I had the privilege of going through some of the best stables in the Old Country, and I did not see a single horse but I could pick a flaw in.

Prof. Sears will have charge of the horticultural department; and he is a man who has very few, if any, superiors in this line. He commands the confidence of horticulturists in Nova Scotia, and he has the art of imparting his knowledge to others.

Dairying will receive attention. Those taking the short course will see dairy cows producing as much milk as any in the Maritime Provinces. They will also receive instruction in the manufacture of butter and cheese from such a practical man as Mr. J. F. Tilley, formerly one of your New Brunswick Dairy Superintendents.

Poultry will be in charge of Mr. Landry; and those of you who have attended the Maritime Winter Fair know how capable a man Mr. Landry is, and how obliging he is in solving your problems of a poultry nature.

Veterinary science should receive more attention in the Maritime Provinces. Dr. Jakeman will give practical instruction in the handling of horses.

We charge nothing for tuition, and already I have one hundred applications, quite a number from this Province, to take the short course.

In our long course we would not be doing justice if we confined ourselves to these subjects, for agriculture is more than an art; it requires more than this—a study of the various sciences which are underlying agricultural work. A number of our students stated to me, when they applied for the two years' course, that they had never had an opportunity to acquire a good English education, and would like to be able to write good grammatical English, and calculate. They felt that to be a necessity. I agreed with them, and we are providing for this at Truro. The college cannot make a man; it can only develop him.

We require students to have put in two years of practical farm work before coming to the college. We have a splendid lot of young men at Truro, and I hope we will be able to continue to have such young men come to us. One careless, indifferent student can injure the name of a college to a large extent; every institution in the world has to harbour such people, and no institution should be judged taking such a man as an example.

Outside the college, I suppose the greatest agricultural educational feature is the Winter Fair. Not only are splendid discussions carried on, but one can inspect all classes of live stock and poultry. He can see animals brought into the ring, and hear their good points scored, as well as their bad ones. Then, also, the exhibitions, such as are held at Fredericton, Halifax, and other places, are of educational value. Our Institutes are spreading agricultural education broadcast, and good will result.

The co-operative experimental work is a very important one. It has been developed to quite an extent in Ontario. We have started a similar work at Truro, and, no doubt, some of you have read about the experiments in the "Maritime Farmer." We will supply seed to any farmer, provided he will send in the results. Mr. Fuller is in charge of this work.

Something about agriculture in our common schools. I am of the opinion that agriculture cannot be taught in our public schools, except here and there, where there happens to be a teacher with exceptional qualifications. and practical experience. Without these qualifications, the teacher endeavouring to teach the subject in a prefunctory way, will be liable to say certain things which have not a practical application, and thus bring the subject into discredit. A lot can be done in interesting the children in the practical things of life, however, but the proper teachers must be secured. Some teachers, when required by the regulations to devote a certain amount of time to nature study, simply make a bluff at the work. The matter should receive very careful consideration.

In conclusion, Prof. Cumming expressed himself as confident that the movement which had sprung up in the Maritime Provinces along agricultural educational lines was bound to put agriculture on a higher plane. Any movement having for its object the uplifting of the agricultural community ought to have the support of the people.

DR. J. R. INCH, CHIEF SUPERINTENDENT OF EDUCATION.

Dr. Inch complimented Prof. Cumming on his lucid address. He made no professions to be a leader in agricultural education. A year ago he dwelt upon the rather unfavourable aspect of educational work in New Brunswick; teachers were hard to obtain, and many schools were forced to close. During the year there has been a decided improvement. Last year there were forty more schools in operation than during the previous year, and something like two thousand more pupils attended. If I had the hearty co-operation of such an Association as this, and had such men as I see before me upon the different Boards of Education, a great many of the difficulties would vanish, because the difficulties largely arise from want of appreciation of the work.

It is not flattering, some may think it rather humiliating, for us to be compelled to go outside of our own Province in order to obtain an agricultural education; and yet, viewing the matter in its proper light, I do not think we should feel humiliated. Some few years ago a proposition was made that the Provinces of New Brunswick and Nova Scotia combine their forces and establish an agricultural college; it was expected Prince Edward Island would come in later. The project was considered and viewed in its various aspects, but was allowed to drop. With the help of the Government, we have been sending a number of students to Guelph, to prepare them for work in connection with the common schools in this Province. We have also been sending some to Truro. Everything considered, it is better that we should do this rather than attempt the establishment of similar institutions in our own Province. It is the more economical way. It is an expensive business to equip a modern agricultural college. The buildings at Guelph have cost more, probably, than all the buildings devoted to educational work in New Brunswick combined; and the annual expense of running that college is fully one-third of the amount expended for educational work in this Province, including our university. It is clearly impossible for New Brunswick, with its limited resources, to undertake to erect and operate a modern agricultural college. In Quebec, through the munificence of Sir Wm. Macdonald, they are establishing a college which, in four or five years' time, will outstrip that of Guelph. I am of the opinion that it would be better for us to avail ourselves of the opportunities these colleges offer rather than attempt to accomplish the impossible task of having one of our own.

It is charged that the common school leads the children from the farms; that the course of study is liable to better equip the children for life in the cities than on the farm. We have been doing what we can to counteract any such tendency, and to meet the views of the farmers in this respect. We have introduced nature study in the public schools. At the present time there are fifty thousand children attending the public schools receiving such instruction. Prof. Brittain has instructed five-sixths of the teachers in this branch; and many of them have imbibed much of his enthusiasm; and I am prepared to believe much good work is resulting. I know a poet of the last century said:

> "A little learning is a dangerous thing,
> Drink deep, or taste not the Pierian spring."

If we would follow along the lines laid down by Prof. Cumming, unless the teachers were thoroughly trained in botany, chemistry, and such sciences, it would be unwise to allow them to undertake teaching nature lessons in the schools. I am scarcely prepared to admit the force of that view;but I believe there is in connection with nature study in our schools enough to awaken the interest and excite the powers of observation of the children, and to develop these powers to an extent that was not known when I was a boy at school, when most of you gentlemen were children going to school. A great deal of useful knowledge can be imparted without going deeply into the scientific reasons underlying the life of plants, and the formation of minerals.

The school garden is an excellent feature of agricultural education that we are furthering. This work is under the supervision of Dr. Brittain. The Government meets part of the expense, and Sir Wm. Macdonald meets part. We have already sent some twenty teachers to Guelph for a three months' course, for the purpose of qualifying themselves for instruction work in school gardens. In Carleton County there are school gardens in connection with the schools at Woodstock, Hartland, at Andover, and other places in that district. Hampton, Norton, Apohaqui, Bloomfield, Kingston, also have their school gardens. We will be able to place a teacher in charge at each place who has had a three months' training at Guelph. I am sorry to say that Dr. Brittain will leave us next summer to accept a chair at the new college at St. Anne de Bellevue. The college is to be congratulated upon its selection. At present he is giving his time to scientific work at the university, without any cost to the Province,and we must have a man to take his place when he leaves. I am sure the Government, when the Macdonald fund ceases to aid us, will not allow us to drop back to where we were; I am sure there will be a universal demand that this class of work be continued. That is my view of agricultural education in New Brunswick. We ought to place a man in the university or Normal School to teach agricultural chemistry both to university students and to the classes at the Normal School, who will also be able to assist at Farmers' Institutes, and establish short courses for farmers' sons, such as are to be carried on at Truro.

The Government, as has been noted in the press, have decided to introduce a compulsory attendance law during the coming session of the Legislature. I have advocated such a step for some time. The law will be placed on the statute books, but it will depend upon the people to have the law enforced. I believe it is the intention of the Government to make the law optional. If it rested with me, I am not at all sure there would be any option in the matter. This matter will come before the several districts at the June meeting, and it will rest with the Boards of School Trustees in the districts and towns to say if it shall be enforced or not. I trust it will be generally adopted, and carried out earnestly and forcibly, and that the wisdom of the course will be fully justified.

Dr. John Brittain, in response to numerous calls from the audience and the chair, addressed the meeting at some length. It is true that agriculture is a thoroughly scientific calling; a man, to be a good agriculturist, has to know the reason for everything he does, and would have to be familiar with the elements of all the natural sciences. But farmers cannot expect, at least those of middle age, to acquire that knowledge. However, these men can see to it that their children acquire such knowledge. You cannot teach the children stock breeding in the schools, such matters are of financial interest; and you cannot get your boys and girls interested in making money; they do not seem to care how much of yours they spend, so long as they get it. (Laughter). If you try to get them to save every cent, they will grow up to be as mean as some farmers are. (Laughter). If you cannot get the boys interested in agriculture from a financial standpoint, you can interest them in the things about home, in nature study. They can be interested in the bird's beautiful song; they can learn one song from another; how the birds make their nests, and where they lay their eggs; they can be interested in the wild plants, and house plants. I have seen beautiful plants in homes taken care of entirely by the mother; the boys and girls took no interest whatever in them. If they could be shown what a beautiful place the country is, and how many interesting things it holds, the boys and girls would not be so anxious to go to the towns. Only a few children see anything beautiful in the country, but they read about the many attractive things in the cities. In the schoolhouses in the country you will not see anything relating to nature; but there is a lot in the school curriculum about it. The school time is almost entirely occupied with books to-day, as it always was. The teachers at the Normal School have too much to attend to, and the facilities are too limited to allow very much nature study being taught. So I do not feel entirely to blame for all the failures in this line. Yet, I know there are a great many teachers in the Province who take an interest in this work, and are trying to interest the children. I trust I have accomplished something.

In reference to what can be done in this direction in the schools, I have spoken of the birds, and plants, and flowers; to follow out the life history of these would interest almost any child; but hundreds of thousands have never done it once. And then how many things about how plants grow could be learned in a simple way at school. One-half of the time the children spend in school is worse than wasted; it is spent in mischief, which is always harmful. If it were not for nature study and manual training there would be no variety to school life. Some people cannot see the benefit of these; there is a lot of indifference to be overcome, and it sometimes seems as if it never would be overcome. By simple experiments, a great deal can be done to awaken the child's mind to seek the reasons for things about farm life. I have heard agricultural lecturers talk about nitrogen, oxygen, carbonic acid, etc., and I felt sure these were mere names to the greater portion of the audience. They had never investigated the properties of these things, and yet, for two cents of expenditure and a test tube, oxygen can be made just as well as at an agricultural college, and can be studied. Nitrogen can also be made without any trouble to speak of. If this were done, it would set a great many boys thinking about the things they come in contact with in their farm work.

Prof. Cumming says a great many of the teachers are not qualified to teach nature study. That is true; a great many are not qualified to teach other things. Most of them are just boys and girls who have had little experience. You cannot expect them to have a wide knowledge of things in general; so that the objection holds good just as well in regard to grammar, arithmetic, or reading. If the teachers are so inefficient in this regard, I think it would be wise to spend our money in extending the Normal School instead of building an agricultural college. Prepare the teachers to impart proper education to the children, the greater number of which will never see an agricultural college. That would be better for the people in general, and let us patronize the Truro Agricultural College. If our teachers are not up-to-date, let us make them up-to-date. Nothing would prove a better expenditure. Let us endeavour to have our boys and girls develop into men and women capable of making beautiful homes, and capable to appreciate them; the mere making of dollars and cents is a miserable occupation; teach the children to look to something better.

I would like to see the consolidated school movement extended. Our Government allows generous grants to districts that will unite and forward the movement. The present country schools are very bad, indeed, in regard to sanitation and general surroundings. You cannot expect boys and girls to attain to high ideals in a miserable schoolhouse. The districts should unite and erect buildings healthful, both morally and physically. At Florenceville this is being done, and a school garden will be laid out there; also domestic science will be taught. If they get good teachers they will have a splendid school; the great thing is to get good teachers.

As to school gardens, I sincerely hope the suggestion of the Chief Superintendent will be taken up; and that when I pass off the stage, some other man will be appointed to look after this movement, because if some one is not appointed, it will go down. It is easy enough to keep up saloons, but worthy things, such as associations of this kind, have considerable difficulty to keep in existence. The school garden, when kept clean and well cultivated, is one of the best things we have to interest the children; but if it is not kept in good condition we do not want it.

Mr. Geo. E. Baxter spoke strongly in favour of school consolidation. The farmers did not want the Government to go to the expense of erecting an Agricultural College. The Government deserved credit for what they had done, but should go a step further. He closed by moving the following resolution:—

"*Resolved,* That in the opinion of this Association, short courses in stock and grain judging, and general practical agriculture, and horticultural instruction, should be established in one or more centres of New Brunswick; and that the Commissioner for Agriculture be, and is hereby requested, to have an attendance canvassed for these courses, and, if a sufficient attendance is assured, to provide such courses in the winters of 1906 and 1907."

The resolution was seconded by W. W. Hubbard.

Mr. Peters thought it would be poor policy to engage in such an undertaking at present. It would be very difficult to get suitable buildings, suitable stock, and suitable instructors to carry out the work. The Department of Agriculture has made arrangements whereby students going to the short course at Truro will have their transportation charges paid, thus putting them on the same footing as if the courses were held in this Province.

He made an appeal for greater interest in the Farmers' Institutes.

In some sections excellent work is being done; in others, notably where there is an indifferent Secretary, there is room for improvement.

Rev. Hunter Boyd supported Mr. Peters in regard to the short courses. He thought there was no need for the Government to spend money on such an undertaking as suggested by Mr. Baxter, when the splendidly equipped Truro institution was within easy reach. If the farmers cannot afford to be away from the farm for two weeks at a short course, the next best thing to do would be to attend the Amherst Winter Fair. Farmers' Institutes should send delegates to this Fair, have them take careful note of what transpires, and, on returning home, be able to give a good account of the Fair.

Mr. Baxter's resolution was lost, only the mover and seconder voting in support of it.

President Innes thanked the delegates for the support given him, and the meeting adjourned.

NEW BRUNSWICK
FRUIT GROWERS' ASSOCIATION.

The second annual meeting of the New Brunswick Fruit Growers' Association opened at the Church Hall, Fredericton, at ten o'clock, on Thursday morning, January 25th, 1906. President J. C. Gilman in the chair.

THE PRESIDENT'S ADDRESS.

Officers and Members of the New Brunswick Fruit Growers' Association,—

GENTLEMEN,—It is with pleasure that I greet you here this morning at this, our second annual meeting, that we may devise ways and means to promote the fruit growing interests of our Province.

The past season has repeated some lessons taught before. The extreme cold of the winter of 1905 has shown us that, as fruit growers, the great advantage of planting hardy varieties; while the mid-summer drouth impressed us with the vital need of a generous supply of plant food, and sufficient moisture in the soil to maintain a steady growth.

The small fruits wintered well, and gave a good average crop, that sold for paying prices. There are many sections of our Province where the increased production of small fruits would give good results.

Some peculiar features of the past year combined to give us a short apple crop. Similar conditions elsewhere helped to give us good prices.

Taken as a whole, the year 1905 has given us much cause to be thankful, and should encourage us to renew our efforts to overcome the difficulties with which we have to contend.

As a Province, how do we stand in regard to fruit growing? Our own markets are not well supplied with good fruits from New Brunswick orchards, and our sister Provinces are supplying the deficiency, and getting the cash that should go into the pocket of the New Brunswick farmer.

True, we want a few of their Gravensteins, Kings, and Spys; but produce more of our own best varieties, place them on the market in prime condition, and let the buyers take their choice; and if we cannot compete with others, it will be our own fault, and not the fault of our climate or soil.

It is not necessary that any sweeping changes of farming should be suddenly made, but rather adopt a middle course, and make orcharding a special part of the farm work. This can be easily and quickly done by many; and, when done with good business judgment, will prove a success. Good fruit is what is wanted.

The best customers in our towns and villages want a good article, and are willing to pay corresponding prices.

The export trade calls for good fruit. The Fruit Marks Act reminds us that the interests of the Dominion of Canada demand good fruit.

How to increase the percentage of No. 1, that is the question. Don't try to do it by any known or unknown system of packing, facing, or marking; they have all been tried, and found wanting. Let us start at the beginning, and get the right varieties; prepare the ground, as any good farmer would, for a crop he expected to yield a good return. Cultivate and keep up the fertility; fight the insect pests; have a good spraying equipment, and use it at the right time, and often enough to answer the purpose. Nip back and prune off all unnecessary growth. Give the air and sunshine a chance to help you. Use proper ladders, baskets, barrels, and boxes. Grade to comply with the Fruit Marks Act, Haul on spring wagons, and watch every move from the tree till they pass from your hands. If this is done the results will very likely be satisfactory.

Our first work, as an Association, might well include the question of varieties, and, in connection with this, I would suggest that a committee be appointed to collect information from the most reliable sources, and prepare lists of varieties best adapted to different sections of our Province, so that we may be in a position to give fairly reliable information on this point to those who are undecided what to plant.

The illustration orchards, placed in different parts of the Province by our Government, cannot fail to be productive of much good in this respect, and afford much information and encouragement to those who are intending to plant fruit in the near future.

Our thanks are due the Department of Agriculture for this work done to further the fruit influence of the Province, and also for substantial aid given this Association to help along the work in hand.

The conference of fruit growers has been called to meet at Ottawa in March, to which we are invited to send two delegates. A list of twelve subjects has been prepared for the consideration of this conference. These questions will be placed before you here, and we hope they will receive due attention.

The request of the fruit growers of the Dominion for a Fruit Commissioner at Ottawa, to look after the fruit interests of Canada, has not yet been complied with, and this Association will be justified in a further expression of opinion on this point.

The object lessons given in grading and box packing by Mr. Boies at the fall exhibitions were very interesting and instructive. Such practical work is the most effective kind; and it is possible that such lessons given at our annual meeting would command more attention, and be productive of better results, than when given at fall exhibitions.

An exhibition of fruit should be an object of interest to fruit growers at most times; and good reasons may be given for making a fruit exhibit a prominent feature of our meeting. Members would then make a point of selecting specimens for the purpose when handling this crop, when the late keeping varieties had become mature and well coloured, when they would be in a state to do justice to the variety, to the care and skill of the grower, and the locality in which the exhibit was grown.

This cannot be done when green, half-grown specimens are shown at early fall exhibitions; and it is questionable if the early exhibits of late fruit answer any real good purpose.

The fruit growers of Nova Scotia, at their annual meeting, extended their congratulations and good wishes to this Association, and should receive our most sincere appreciation and good wishes.

The San Jose Scale, so far as our information goes, has not made its appearance in our Province; and, while we appreciate the action of the Department at Ottawa, to prevent its spreading, we should be on our guard ourselves.

Such acts as the fradulent packing and marking of apples come to us through the weekly reports of trade and commerce, and should be discouraged, as they are not made use of by an honest man or loyal Canadians.

INJURIOUS INSECTS.

(Illustrated with Charts and Specimens).

WM. M'INTOSH, ST. JOHN, N. B.

Mr. McIntosh was very glad that a Fruit Growers' Association had been formed in this Province; there was much work that it could undertake that would benefit the fruit industry.

I am to talk to you about insect pests. Fruit growers have two kinds of pests to fight against—one is the fungus diseases, smuts, black spot, etc.; but I am not going to touch upon these to-day. The other class is the insect ravages. Here is an apple showing the ravages of the Coddling Moth (indicating on chart), one of the worst pests we have in the orchard. At Cornell, they have studied these insects very closely, and, in a bulletin from that college, it is stated that from one-quarter to one-half of the apple crop of the United States is destroyed annually by these insects alone. That is a very strong statement. When I tell you that I have found, in my investigations in Southern New Brunswick, that there are forty insects in that section that prey on the fruit trees, you will think it is impossible for a man to obtain a crop at all. However, we can control these insects, and it is not such a difficult matter if properly attended to.

About the latter part of June you will find little moths hovering about the trees. The egg is deposited on the outside of the apple. As soon as the little caterpillar hatches, it is less than one-eighth of an inch long. It bores into the core, where it remains for a month; then it bores straight out, goes into the cocoon stage, goes into the ground, comes out in the spring as a worm, then changes again into a moth state, and is able, at the end of June, to lay eggs. If you spray, just as the buds are opening, you will catch this pest. You will also catch another—the Bud Moth. Spray when the calix opens; and when this pest begins to eat, his first meal is his last. Neglect the spraying for a few days, and you will find the calix partly closed; and it will take some very skilful spraying to get the poisoned mixture in, where before any kind of spraying would have answered. Be careful to watch when the blossom falls; and when you spray for the Coddling Moth, you will catch several other pests at the same time. The Coddling Moth is one of the worst pests we have to deal with.

The Oyster Scale Bark Louse is also a very troublesome pest, and is very prevalent all over the Province. This insect is very easily cleaned off if you go about it right. In the winter, you will find the trees covered with these scales; about June they hatch. If you open one of the scales, you will find they contain the eggs. Immediately after it is hatched, the insect crawls to the extremity of the branches, where it locates. It sucks the juice of the plant, and in a few days there is a wet secretion, which covers the insect, and gradually becomes a scale; it stays in that condition all summer, and reproduces its eggs. The male is winged, and can fly from one tree to another. The best time to take this pest is in the latter part of June, when it is in the crawling stage. Spray with kerosene emulsion at this time. If you wait till the scale has been formed, you can spray as much as you like without effect; for it is protected by the scale. I have never sprayed in the winter months, because I have never found it necessary; but you can spray in the winter with a weak lime wash. The action of the lime loosens the scale, and the rain and winds cause it to drop off.

A member: What material do you use for spraying?

Mr. McIntosh: Arsenical, or kerosene emulsion. It is said a wash with dust or dried ashes will kill them, because they suck, and can be smothered.

The Canker Worm does not do much damage here, except periodically. They attack the trees just as the leaves come out. Your trees have a blighted appearance; and if you shake them, caterpillars will fall off. Any of the arsenical mixtures will kill this worm. It will strip the leaf, leaving only the mid-rib, but does not attack the fruit.

The San Jose Scale attacks the apples, peaches, and plums. You require a microscope to see them; and yet the branches of this specimen are well infested.

The Apple Aphis originates from minute black eggs. The pest covers the leaves of the tree. The leaves curl up. Soap, or oil washes, should be used.

The Bud Moth is very much like the Coddling Moth; you can scarcely distinguish it. It is a very serious pest, indeed. The little caterpillar hatches out in the fall, makes a little case at the extremity of the branches, in which it stays all winter; just as soon as the buds begin to burst, it emerges and attacks the bud.

The Spray Calendar, issued by the Dominion Department of Agriculture, and which can be had for the asking, recommends an application of copper sulphate, or Bordeaux, as soon as the buds open. You will then catch some of all the insect pests. A second application will catch the Coddling Moth. You should obtain this calendar, and follow the directions laid down there in regard to spraying.

The Tent Caterpillar can be destroyed by spraying, if taken early enough. There are two varieties, the Forrest Tent and the Apple Tent. In the early season they attack the unfolding leaves. Your first spraying, which is intended for the Bud Moth, will also catch Tent Caterpillars.

For the Flat Headed Apple Borer, kerosene emulsion or whale oil soap should be used. I have never known these insects to do very much damage in New Brunswick.

A member: What is the difference between that and a Round Head?

Mr. McIntosh: The Round Head is a very different worm altogether; it is a different looking insect.

Here is a chart showing its formation. It is the worst pest of the two. The larva is round, and pretty much the same size all the year round. It is a bad pest, but we do not find it here to any large extent.

A member: The flat headed ones are prevalent here. Dirty farmers leave trash around, in which they harbour.

Mr. McIntosh: In the States they cut down trees and place the wood around the outside of the orchard; these pests do not attack healthy trees. Clean culture is the best method of avoiding them. Crude petroleum is very good.

The Shot Borer does considerable damage in Nova Scotia. It does not enter fruit trees to feed on the pith, but simply to make its nest. Nevertheless, it is a serious pest.

Currant Worm. Our bushes are full of this worm. They can be easily destroyed with hellibore. A watering can of this mixture will kill them in no time. There is no excuse whatever for having these worms about.

We owe a great deal to our Governments, both Dominion and Provincial, for the work they are doing to enable the orchardists to combat the various pests. Almost every week bulletins written by experts are issued, giving excellent advice. Some farmers have a sort of idea that as soon as the word science is mentioned, what follows is outside their comprehension. We should be very grateful to the scientistes, men who spend their lives in studying the life history and manners of the insects; and, knowing them, are able to give us formulae to destroy them. It is because of these investigations that you know just how to protect your fruit when attacked by these insects. Let every man take advantage of the bulletins and spray calendars issued by the Government, and he will have no difficulty in keeping his orchard free from pests and disease.

Mr. Peters: Have you any charts of the Gypsy or Brown Tail Moth? There was a specimen found at Welsford Station about three years ago. I would like the people to be on the watch for it.

Mr. McIntosh: The Provincial Government has not many millions to spend, so it would be well for everyone to watch out for this insect. I found the specimen Mr. Peters speaks of at Welsford, but, fortunately, no more have been found in the Province. The destruction of this Moth is causing the State of Massachusetts millions of dollars. It attacks all kinds of trees, and strips them bare. It's life history is very much like that of the Tent Caterpillar.

Mr. McIntosh had specimens of the various insects he mentioned in his address, which were passed through the audience. He also exhibited charts of many insects in their various formations, and in this way his address was very interesting and instructive.

AFTERNOON SESSION.

PROF. W. T. MACOUN,

Horticulturist, Experimental Farm, Ottawa.

Prof. Macoun was very glad that he was able to attend the first meetings of the Fruit Growers' Association, because one can follow the history of an association with much more interest if he is familiar with the early doings, and becomes acquainted with the men who launched it on its career. It was a great pleasure for him to meet the fruit growers of this Province; they must be men of high standing, for it requires character, skill, and judgment if a man is going to be a successful fruit grower.

Continuing, Prof. Macoun said; My subject is "Causes of Success and Failure in Fruit Growing;" but I think if we take up the different subjects in connection with fruit culture, the causes and failures will probably be brought out.

I would like to say a few words about varieties. In earlier years, it was thought that we could grow in this country apples of the most hardy varieties only. These hardy varieties, which were nearly all early apples, and crab apples, were the ones that could be grown with the least care; and, in consequence, they grew thriftily, and in time there was a great quantity of this kind of fruit. The result was that the local markets became glutted, and many of the farmers gave up fruit growing as a result.

I hope to get from the discussion some information as to the best varieties for New Brunswick, so that only the varieties that will thrive and give us the best quality of fruit will be planted. Before planting, we must take into consideration the markets we are going to cater to. The principal difficulty with early fruit is that it must be gathered at a season of the year when the farmer is busy with other crops; the result is that the fruit is neglected, and, when sent to market, is not in a good condition, and brings corresponding prices. I think it would be a very good scheme for half a dozen farmers in a neighbourhood, who are growing early fruit, to co-operate, and place all this class of fruit on the market in one lot. The result would be far better prices than if each indilvidual were to place consignments of more or less damaged fruit on the market at intervals. That is the best way to handle this class of fruit—ship in good time, and ship in bulk.

You are situated here under very much the same conditions as we in the Ottawa Valley, where it is extremely difficult to grow winter apples. I am speaking particularly of the St. John Valley, from Fredericton, North. The conditions from Fredericton, South, are a great deal more favourable; but I do not think there are many here from that section, and I will speak of the Northern district. At the Experimental Farm we have tested some seven hundred varieties of apples, and I may say that we have not yet discovered an apple of sufficient hardiness and high merit to compare favourably with the Northern Spy, or Baldwin, or Rhode Island Greening. There is some reason for that. In order to get a good winter apple, you have to get an apple that does not mature on the tree; an apple such as that means a tree that does not mature early; and that tree, as a rule, is a tender one. The Ben Davis is the nearest approach to such a tree; but it is not a perfectly hardy tree, either. It is not as vigorous a grower as some of the other winter varieties, but is an early bearer. Such apples as Fallawater, Spy, Greening, and others, grow a good deal in the fall, and the tree does not ripen properly. What we want in this Northern district is a variety that will ripen its wood early. Can we get an apple that will mature early, and yet keep all winter? I think it is possible to get such—one that will keep till March or April. Of all the varieties, I think it would be well for us to confine ourselves to half a dozen, because we shall have better results if we stick to those which always succeed, when properly looked after, which will always bring good prices on any market, because of their quality and appearance. I would first mention, in this connection, the Wealthy. This I consider one of the best varieties to grow in the Province of New Brunswick, especially in the Northern part. It begins to bear two or three years after planting, and is one of the most profitable kinds to grow if properly looked after. It is inclined to overbear; and, in consequence, if allowed to do this, the fruit will become small, and fall off in value. Under proper management, the Wealthy is one of the handsomest apples we have. This year our Wealthies sold at Glasgow for six shillings a box. One important thing is, that it does not spot, and that is a great consideration in growing fruit.

The next variety is the Alexander. I believe this to be one of the most profitable varieties that can be grown in the Province of New Brunswick. This is a very hardy tree, and the fruit is of a large size. A large proportion of the fruit is No. 1. It is not subject to spot to any large degree; and if properly picked, packed, and shipped, will compare well with the best apples on the British market. There is a great call for the Alexander, and the men who are growing them say it is one of the most profitable apples to grow. The quality is not very high as a dessert apple; but as a cooking apple it is of high merit.

The Wolf River is a good variety for you to plant here. It will stay on the tree better than the Alexander. If you have a large quantity, you can start picking Alexanders and finish on Wolf River. It will keep a little better than Alexander, and is a very desirable apple to plant. I would not advise substituting the Wolf River for Alexander, because the latter has keen known for a long time on the market, and will be asked for, while the Wolf River is a comparatively unknown apple. It would be better to have both.

The McIntosh Red has proved one of most acceptable apples. It is being shipped to the Old Country in small quantities, and is bringing good prices. In Ottawa, at present, they are selling for $5 per barrel; but the average prices has been $3.50. No. 1 McIntosh Red will always command high prices, as it is one of the best dessert apples to be had. One defect is, that it is subject to spot, but not any worse than Fameuse; and if you are going to grow apples of that variety, it is necessary to spray anyway. It is also an annual bearer. The tree is quite hardy, and is one of the most vigorous and healthy we have growing.

The Fameuse is another variety we should grow. It has been well known on the British market for many years, and will always command good prices. It is one of the best dessert apples we have. The tree is quite hardy.

These are the varieties I should grow if I were orcharding in the St. John Valley north of Fredericton, judging from what I have seen at the exhibitions in this Province.

The Dudley, or North Star, is an apple of about the same season as the Wealthy, but is larger, and does not drop so badly, and is handsome, and of good quality. The tree is hardy and productive. This variety should be given a trial.

There is an apple which is the nearest approach to a good winter apple—the Milwaukee. The tree is an early bearer, and is vigorous. It is practically a Winter Duchess. The fruit is acid, juicy, and is excellent for cooking purposes. They will keep in good condition till about March. This tree would make a very good filler for an orchard.

The next point is the protection of trees from mice. It is very discouraging to bring an orchard into bearing and then have the trees girdled by mice, as has been the case in hundreds of instances. The trees, however, con be protected with very little trouble; and it is owing altogether to carelessness if such a disaster befall an orchard. We have tried a number of methods at the Experimental Farm, and the simplest one for the protection of trees from mice is to wrap the trees with common building paper; tar paper should not be used, and is harmful in several ways. I have never known mice to eat through common building paper. Care should be taken to see that the paper is close to the ground; tie loosely with string, the looser the better, as it will afford greater protection from sun scald. In Nova Scotia, a man reported the loss of eight hundred trees, and laid the blame to tar paper. We have also used wood veneer for the same purpose. This veneer is made of elm, 15 x 22 inches, and will afford protection from sun scald as well as from mice. The idea in tying loose is to afford an air space around the trunk, which will prevent the thawing of the sap. It is the thawing and freezing of early spring which does the damage.

Spraying is of the utmost importance. There is not much use in bringing an orchard into bearing if we neglect to protect the trees from insect pests and fungous diseases. We are obliged to spray if we want No. 1 fruit; and competition has become so kéen that we must produce the highest grade of fruit if we are to have a profit. There are three sprayings which should not be neglected. The first is early in the spring, just as the buds are breaking. At this time the insects are hatching. It is then we catch such pests as the Tent Caterpillar. They can be easily destroyed; but if spraying is neglected at this time, it will be found a very difficult matter, indeed, to kill them later on. At this time, also, the tree is bare of leaves, and you can get at the spores of the Black Spot fungus. These spores come through the winter in a dormant condition, and Bordeaux mixture will destroy them when they are germinating, and will destroy the fungus when it begins to grow. The next spraying is when the buds are opening. We apply at this time particularly for the Bud Moth, and also for the Black Spot. The third spraying is just as the blossoms fall, and then it is that we catch the Coddling Moth. These three sprayings are of the utmost importance, and should not be neglected.

Now, in regard to cultivation. We heard a good deal this morning about the Oyster Shell Bark Louse. You will find that pest on trees, making a very slow growth, growing in sod. The nearer the trees come to being dormant, the greater the infestation. You will find this nuisance in neglected orchards, and carless orchardmen nearly always have this insect on their hands. Lime wash gives excellent results. One to one and a half pounds of lime to a gallon of water, and applied in the autumn or winter months will have the effect of killing nearly all the lice. Spray the tree from top to bottom; and if you have made a good job, the tree will be perfectly white. The action of the lime loosens the scales, and the action of the wind, snow, and rain during the winter speedily frees them from the tree. This wash will also take off any moss that may have collected, and will destroy the Aphis.

Mr. Peters: Are these scales always on the new wood?

Prof. Macoun: Not necessarily; I have seen living scales on the trunk of a tree a foot in diameter.

It is hard to get a thrifty growth unless you cultivate thoroughly. As a rule, it is better to thoroughly cultivate the trees, although there are some cases where they will get along without it. It is very necessary to have a cover crop in this country, where we have so much cold in the winter months. A cover crop is of great importance in such a winter as this, because the snow has almost entirely disappeared, and the heavy mulch formed by the cover is a great protection. It prevents a great deal of thawing and freezing around the roots of the trees. It will also add fertility to the land; but I presume Prof. Sears will take up that point this evening.

We often hear complaints, that a great many of the trees the nurserymen sent out refuse to grow. These trees are taken from the ground by the nurserymen the fall before, and do not reach you till the next spring; so you can see how carfeully they must be handled. When you receive your trees, examine the condition they are in. If they appear reasonably fresh, heel them in at once if you are not ready to plant. If they appear wilted, immerse them completely in water for a day or two, after which you can heel them in. When you take them into the field to plant, do not allow them to be exposed to the hot sun and wind while awaiting their turn to be planted; they should be kept well wrapped up in wet sacking. Before planting, make a puddle of clay and water, and dip the roots into it.

Mr. Peters: Last year I was asked by the "Maritime Farmer" to give my idea of why so many trees were killed.

Prof. Macoun: The trees were winter killed. We lost one hundred and sixty-two different varieties that winter at the Experimental Farm. The weather was extremely severe. It is not a sudden drop of temperature that does the damage, but protracted periods of intense cold, with sweeping winds. Evaporation is going on from the trees all winter; and if you get a long spell of dry, cold weather, the evaporation will be greater than the tissue of the tree will stand. They suffered severely from this in the West; but wind breaks have been grown with good results.

Mr. Peters: They seemed to have made a short growth in the spring, indicating that they had come through the winter alive, but received their check in the spring.

Prof. Macoun. There was enough moisture left in the trees to start the buds, or to make them leaf somewhat; but before the sap started they died.

President Gilman and Isaac Stephenson, of Sheffield, were appointed delegates to the Dominion Fruit Growers' Conference, to be held at Ottawa during the month of March.

The report of Treasurer Wilmot showed receipts during the year amounting to $134, and an expenditure of $5, leaving a balance of $129 on hand.

Mr. Peters spoke of the necessity of having apple barrels of uniform size. They had a standard size in Nova Scotia, and also in Ontario; but the New Brunswick farmer used any kind of a barrel that he could get hold of. He wanted to hear a discussion on the subject.

Mr. Peters read over a list of subjects to be discussed at the Ottawa conference, and a committee was appointed to define the attitude which should be taken on the same ground by the New Brunswick delegates.

Prof. Sears thought it was desirable to have a uniform sized barrel for the whole of Canada. He said the freight was no grater on a larger barrel than on a small one.

President Gilman thought the Association should urge having the Ontario barrel made the standard.

Mr. Wm. McIntosh, of St. John, was in favour of adopting the Ontario barrel. He thought there should be a standard package used for the export trade.

Mr. Peters said the standard box for Canada was 10 x 11 x 20 inside measurement. The box should have a thin cover, so that if the box happened to be a little full, it would not crush the apples.

On motion of Mr. Peters, a hearty vote of thanks was presented to Mr. McIntosh for his excellent address.

On motion of S. B. Hatheway, a resolution recommending that the Ontario apple barrel be made the standard for Canada, was adopted.

EVENING SESSION.

The evening session was opened with a practical demonstration on tree pruning, by Prof. Sears, Horticulturist of the Truro Agricultural College. He explained that on the setting out of apple trees, it was advisable to cut off one-half of the previous season's growth. A common pair of shears was the best instrument to use in tree pruning. On general principles, he was in favour of the low headed trees. In all pruning, it was important to preserve all the fruit spurs located near the centre of the tree as long as possible. As for the root of the tree, it is pretty thoroughly pruned by the man who digs it in the nursery, but all broken roots should be cut back to live wood.

The following officers were elected for the ensuing year: —

President—J. C. Gilman, Kingsclear.
Vice-President—Isaac W. Stephenson, Sheffield.
Treasurer—Henry Wilmot, Belmont.
Secretary—T. A. Peters, Fredericton.

DIRECTORS.

J. W. Clark, Sunbury.
J. F. Tilley, Carleton.
C. E. Esmond, Kings.
William McIntosh, St. John.
John Ferguson, S. B. Hatheway, York.
George McAlpine, Queens.
R. Richardson, Charlotte.

COMMITTEE'S REPORT.

The following report was read by Mr. Hubbard, and adopted:—

Your committee appointed to consider the suggested topics for discussion at the coming Ottawa Fruit Conference, beg to report that, with the limited time at their disposal, they are unable to give such presentment as the importance of the subject deserves, and can only make very brief and incomplete suggestions for your consideration.

1. *Statistics and Fruit Crop Reports.*—We suggest that the work already started by the fruit division of the Department of Agriculture should be encouraged, and that fruit growers everywhere should furnish

statistics and crop prospects within their reach promptly when requested by the division.

2. *Transportation.*—That an extension of cold storage and refrigerator car service is urgently needed, and that the rates of the express companies operating in Canada should be brought under the supervision of the Railway Commission. We believe that the rates at present charged by the express companies seriously interfere with the development of our fruit interests.

3. *Packages.*—In addition to recommending that there be a uniform barrel for Canada, we would suggest that more expeditious means than at present exist be provided to prevent the use of barrels and other fruit packages blow the legal size.

4. *Adulteration.*—It is regrettable that many of our best grocers consider, that to be sure of getting pure fruit, jams, and jellies, they must import them from English manufacturers; and we would suggest that the Department of Inland Revenue be asked to give this matter their special attention.

5. *Nursery Control.*—Fruit growers would undoubtedly be in a safer position if such control were exercised over nurseries that their owners, before they could legally collect money for trees sold, should be compelled to hold a certificate from a competent inspector, stating that their stock was free from all dangerous scales, insects, or diseases.

6. *The Fruit Marks Act.*—We would suggest that the following definition for No. 2 fruit be embodied in the Fruit Marks Act, viz.:—

> "No. 2 apples shall consist of well-grown specimens, of fair size, colour, and shape, and not less than 85 per cent. free from scab, worm holes, and other defects, and packed in the same careful manner as provided for in No. 1 fruit."

7. *Horticultural Education.*—We would recommend that our delegates examine into the moves that have been made in the direction of horticultural education in the different countries of the world, and be in a position to assist in making such suggestions as may be in the best interests of Canadian horticulture.

8. *Fruit Exhibitions.*—Your committee would recommend that our delegates give the subject thorough investigation and consideration, and make such recommendations as will, in their judgment, make our fruit exhibitions more educational to both producer and consumer, more encouraging to the growth of the best commercial varieties adapted to the district, and in every possible way calculated to encourage the growth and disposal of our fruits.

9. *Markets and Marketing.*— Our Federal Department should be urged in every way to safeguard and develop our export trade, and to make conditions as easy as possible for trade with the Dominion.

Respectfully submitted,

(Signed) W. W. HUBBARD,
HENRY WILMOT,
WM. McINTOSH.

Prof. Sears, of Truro, gave a most instructive talk on Soil Management in the Orchard, illustrating his subject with lantern slide views. He spoke of the great importance of cultivation in an orchard, and advised that the work start as early in the spring as possible.

The views shown were made from photos taken by the Professor in the big orchards of the Annapolis Valley.

President Gilman thought it would be a good idea to have a fruit exhibit at each annual meeting.

Mr. Peters approved of this idea, but thought the scarcity of funds was a serious stumbling block.

On motion of Mr. Peters, it was decided to make the fruit exhibit an annual feature in connection with the meeting.

Votes of thanks to the City of Fredericton, for the use of the hall, and to the ladies and gentlemen who furnished music at the meeting on Tuesday evening, were adopted.

A vote of thanks was also tendered to the railways for providing transportation at reduced rates.

Mr. Peters announced the list of prize winners for the best exhibits of apples to be as follows:—

Fameuse—George McAlpine.
McIntosh Red—J. C. Gilman.
Alexander—J. C. Gilman.
Wolf River—George McAlpine.
Bishop Pippin—George McAlpine.
Bethel—A. W. Ross.
Baxter—I. W. Stephenson.
Midling—J. C. Gilman.
Ontario—George McAlpine.
Golden Russet—George McAlpine.
King of Tompkins—George McAlpine.
Northern Spy—George McAlpine.

Wealthy—Henry Wilmot.
Stark—Mrs. Hunter Boyd.
Gano—George McAlpine.
Ben Davis—George McAlpine.
Canada Red—S. B. Hatheway.
Seedling—H. Wilmot.

Collection, ten varieties—George McAlpine, 1st; J. C. Gilman, 2nd.

Best packed box of apples—George McAlpine, 1st; J. C. Gilman, 2nd.

At the close of the meeting, President Gilman extended an invitation to the audience to partake of the luscious display of fruit exhibited on two long tables at the front of the hall. It is needless to say that the invitation was accepted with alacrity.

The meeting broke up with the singing of the National Anthem.

LIST OF MEMBERS OF THE NEW BRUNSWICK FRUIT GROWERS' ASSOCIATION FOR 1906.

Admstrong, Geo., St. Marys.
Bowder, A., St. Marys.
Boyd, Mrs. Hunter, Waweig.
Clark, J. W., Maugerville.
Clements, F. DeL., Fredericton.
Esmond, C. W., Sussex.
Elderkin, E. B., Amherst.
Farris, Hon. L. P., White's Cove.
Ferguson, John, Lower Queensbury.
Gandy, Barton, St. John.
Gilman, W. B., Fredericton.
Gilman, J. C., Fredericton.
Gilmor, J. W., Oromocto.
Giles, C. H., Fredericton.
Gill, Henry, Gibson.
Hubbard, W. W., St. John.
Hatheway, S. B., Fredericton.
Hetherington, I. T., Jenkins.
Innes, Donald, Tobique River.
Jensen, A. J., Salmonhurst.
Mitchell, Harvey, Sussex.
Macoun, W. T., Ottawa.
McFate, W. A., Golden Grove.
McIntosh, Wm., St. John.
McAlpine, Geo., Lower Gagetown.
Patchell, R. R., St. John.
Peters, Thos. A., Fredericton.
Pugh, Horace, Marysville.
Peters, S. L., Queenstown.
Roberts, Chas., Red Rapids.
Rennie, Wm., Toronto.
Ross, A. W., Douglas.
Stephenson, I. W., Upper Sheffield.
Sears, Prof. F. C., Truro, N. S.
Thomas, A. D., Fredericton.
Tilley, J. F., Woodstock.
Wilmot, Henry, Oromocto.

AGRICULTURAL SOCIETIES.

Accounts and Reports for Year 1905.

SOCIETY FOR DISTRICT No. 1, RESTIGOUCHE COUNTY.

President—W. W. Doherty, Campbellton.
Secretary-Treasurer—J. H. Taylor, Campbellton.

INCOME.

Balance from previous year	$16 89	
Provincial grant	88 00	
		$104 89

EXPENRITURE.

Allowance to officers	$ 4 40	
Other expenses	11 75	
		$16 75
Balance on hand		$88 74

JOS. H. TAYLOR, Treasurer.

NOTE.—No subscription list received.

SOCIETY FOR DISTRICT No. 2, RESTIGOUCHE COUNTY.

President—John Barberie, Dalhousie.
Secretary-Treasurer—Jas. E. Stewart, Dalhousie.

INCOME.

Balance from previous year	$168 05	
Subscriptions and donations (45 members)	45 00	
Provincial grant	88 00	
Sale of stock	38 00	
		$339 05
Carried forward		$669 05

Brought forward, ... $669 05

EXPENDITURE.

Paid premiums	$ 76 00	
Stock and expenses	200 90	
Expenses of show	4 00	
Allowance to officers	15 00	
Farmers' Institute	11 00	
Other expenses	1 30	
		$308 20
Balance on hand		$30 85

JAS. E. STEWART, Treasurer.

REPORT.

Spring opened early, and dry; August and first part of September, dry; latter part of September, very wet; October, dry.

Hay an average, and saved in good condition. Wheat an average. Oats a good average, the late grain very badly saved; straw almost worthless. Buckwheat below the average. Potatoes a very good average, and clear of rot. Turnips a good average.

Apples below the average. Plums and other small fruits very scarce. Cherries a splendid crop, and clear of blight.

During the year the Society held the usual show, and purchased two Shorthorns and one Ayreshire Bull.

JAS. E. STEWART, Secretary.

SOCIETY FOR DISTRICT No. 3, GLOUCESTER COUNTY.

President—P. J. Power, North Tetagouche.
Secretary-Treasurer—Wm. Rogers, Bathurst Village.

INCOME.

Balance from previous year	$131 03	
Subscriptions and donations (83 members)	83 00	
Provincial grant	105 00	
Sale of stock	46 50	
Sale of seeds	109 67	
		$475 20

EXPENDITURE.

Stock and expenses	$114·17	
Seeds and expenses	109 67	
Allowance to officers	24 43	
Treasurer Farmers' Institute	20 75	
Other expenses	6 86	
		$275 88
Balance on hand		$199 32

REPORT.

The general character of the past season was cool and dry.

Hay an extra crop; ninety per cent. of a full crop, and well stored. Grain eighty per cent. of a full crop. Roots of all kinds, a full crop of the best quality.

Fruit a failure, not ten per cent. of a crop.

The operations of the Society have been along the line of stock and seed improvement. An improvement is clearly to be seen as a result, especially in sheep and swine. There is need of a purebred draft horse in this district.

WM. ROGERS, Secretary.

SOCIETY FOR DISTRICT No. 4, GLOUCESTER COUNTY.

President—N. R. Richey, New Bandon.
Secretary—Horace Hornbrook, New Bandon.
Treasurer—Thos. Dempsey, Stonehaven.

INCOME.

Balance from previous year	$244 47	
Subscriptions and donations (50 members)	100 00	
Provincial grant	120 00	
Sale of stock	17 30	
Sale of seeds	662 11	
From Treasurer Farmers' Institute	35 00	
		$1,178 88

EXPENDITURE.

Stock and expenses	$ 48 00	
Seeds and expenses	787 76	
Allowance to officers	12 00	
Treasurer Farmers' Institute	12 50	
Other expenses	30 30	
		$890 56
Balance on hand		$288 32

THOMAS DEMPSEY, Treasurer.

REPORT.

May, dry and cool; seed time earlier than usual. June, cool. July, very warm, with splendid growing showers. August and September, wet.

Hay a full crop, and well saved. Grain good, ripened well. The first two weeks of September were very wet and warm, which made it difficult to dry sheaves. Roots an average.

Fruit not raised to a very large extent, but below the average, caused by extreme frost of last winter, the cool, damp winds of spring, and then a late frost.

Purebred cattle are not numerous in this district; and what there is, consist of Shorthorn and Holsteins. The Holsteins are fine milkers, but require better feed and pastures than do the Ayrshires. Holsteins being large boned, will make good beef. Shorthorns are also esteemed for their beefing qualities. We want to buy some young heifers of this breed, and will pay well for the proper animals.

Operations of the Society are, as ever, for the further extending of agriculture along the lines of stock raising and the importing of good seed. We had to import largely this year of the latter, on account of last year's storm creating such havoc. We applied to the Legislature for some help toward procuring seed, and received much sympathy, but nothing in the way of a special grant. The bountiful crop of this year will more than compensate last year's loss; and the farmers of this locality are in a good condition to meet the coming winter, for which we have to thank a bountiful Providence.

HORACE HORNBROOK, Secretary.

SOCIETY FOR DISTRICT No. 8, NORTHUMBERLAND COUNTY.

President—John Betts, Millerton.
Secretary—J. J. Clarke, Millerton.
Treasurer—F. H. Jardine, Renous Bridge.

INCOME.

Balance from previous year	$ 83 33	
Subscriptions and donations (100 members)	100 00	
Provincial grant	120 00	
Sale of seeds	265 43	
		$568 76

EXPENDITURE.

Seeds and expenses,	$265 43	
Allowance to officers	15 00	
Expenses delegates to F. and D. Association	48 00	
Treasurer Farmers' Institute	25 00	
Other expenses	41 50	
		$394 93
Balance on hand		$173 83

F. H. JARDINE, Treasurer.

REPORT.

Spring early, cold and dry, and very favourable for placing a large acreage under crop. Early summer dry, but a fair amount of rain in time to promote a good growth.

Hay a good average, and well saved. Wheat and oats above an average, free from rust, and other forms of blight. Buckwheat and barley very little sown. Potatoes much above the average. Turnips and other roots about an average. Fruit very poor, owing to the cold spring.

The Society held several meetings during the year, at which improved methods of farming and stock raising were discussed. No show was held this year, and the surplus funds will be devoted to buying purebred stock.

J. J. CLARKE, Secretary.

SOCIETY FOR DISTRICT No. 9, NORTHUMBERLAND COUNTY.

No returns received from this Society.
Officers last year were:—
President—Alex. G. Dickson, Chatham.
Secretary-Treasurer—Geo. E. Fisher, Chatham.

Balance on hand, 1st December, 1904	$396 18

SOCIETY FOR DISTRICT No. 12, KENT COUNTY.

President—Francis O. Richard, McLeod's Mills.
Secretary—M. J. Poirier, St. Louis.
Treasurer—Phil. Leger, St. Louis.

INCOME.

Balance from previous year	$100 77	
Subscriptions and donations (100 members)	100 00	
Provincial grant	120 00	
Special grant	125 00	
Sale of seeds	505 58	
Other sources	30 07	
		$981 42
Carried forward		$981 42

Brought forward,		$981 42

EXPENDITURE.

Mud digger	$183 55	
Seeds and expenses	495 83	
Allowance to officers	11 00	
Expenses delegates to F. and D. Association	29 70	
Treasurer Farmers' Institute	25 25	
Other expenses	13 58	
		$758 91
Balance on hand		$222 51

PHIL. LEGER, Treasurer.

REPORT.

Hay an average crop. Wheat an average. Oats below the average. Buckwheat an average. Barley and peas an average. Apples poor.

No exhibition was held this fall, the funds being spent in the erection of a mussel mud digger. Two hundred and eighty-two scow loads, 5,640 cart loads of mud, were raised last season. This mud makes excellent fertilizer, especially for clay lands. I would advise every Parish in the County to build one of these diggers. Next year an exhibition will be held, as usual.

M. J. POIRIER, Secretary.

SOCIETY FOR DISTRICT No. 13, KENT COUNTY.

President—Geo. N. Clark, Rexton.
Secretary-Treasurer—John Jardine, Jardineville.

INCOME.

Balance from previous year	$182 04	
Subscriptions and donations (67 members)	100 00	
Provincial grant	120 00	
Other sources	432 00	
		$834 04
Carried forward		$834 04

Brought forward,		$834 04

EXPENDITURE.

Paid premiums	$124 45	
Fertilizers	518 40	
Expenses of show	8 00	
Allowance to officers	11 25	
Expenses delegates to F. and D. Association	14 00	
Treasurer Farmers' Institute	16 75	
Other expenses	28 85	
		$721 70
Balance on hand		$112 34

JOHN JARDINE, Treasurer.

REPORT.

Hay a good crop, larger than last year. Wheat above the average; some parties report very large yields, as high as sixty bushels from two sown. Potatoes a good crop. Turnips fair. Apples fair. Other fruit below the average.

The Society held meetings, and sent a delegate to the F. and D. Association meeting at Fredericton.

Two schooner loads of lime were brought from Cape Breton, which was burned and used as fertilizer. Lime and superphosphate were imported from other places for the same purpose.

The exhibition of live stock and farm produce in October was largely patronized. The live stock showed a marked improvement over previous years.

JOHN JARDINE, Secretary.

SOCIETY FOR DISTRICT No. 15, WESTMORLAND COUNTY.

President—James Wilbur, Shediac.
Secretary-Treasurer—F. S. Inglis, Shediac.

INCOME.

Balance from previous year	$ 81 96	
Subscriptions and donations (89 members)	89 00	
Provincial grant	131 00	
Sale of stock	137 76	
		$439 72

EXPENDITURE.

Stock and expenses	$157 85	
Seeds and expenses	9 45	
Allowance to officers	12 82	
Other expenses	122 26	
		$302 38
Balance on hand		$137 34

F. S. INGLIS, Treasurer.

SOCIETY FOR DISTRICT No. 16, WESTMORLAND COUNTY.

President—Wm. Prescott, Baie Verte.
Secretary-Treasurer—J. R. Taylor, Little Shemogue.

INCOME.

Balance from previous year	$ 35 35	
Subscriptions and donations (173 members)	173 00	
Provincial grant	156 00	
Sale of seeds	468 90	
Other sources	287 15	
		$1,120 40
Carried forward		$1,120 40

Brought forward, ... $1,120 40

EXPENDITURE.

Paid premiums	$362 80	
Seeds and expenses	486 61	
Expenses of show	29 85	
Allowance to officers	30 80	
Treasurer Farmers' Institute	43 25	
Other expenses	108 39	
		$1,061 70
Balance on hand		$58 70

J. R. TAYLOR, Treasurer.

REPORT.

An exceedingly rough winter was followed by a fairly good spring. Snow went off early, principally with the sun, thus lessening the damage by freshets. The weather was cold and dry up to about May 8th, when more or less rain set in for a few days. Seeding began about 15th May.

Hay about an average, and good weather prevailed during the gathering of it.

Grain fully up to the average, and harvested in grand condition.

Potatoes slightly below last year. Turnips very good, both in quality and yield. Garden vegetables a full crop.

This is not a district where the raising of fruit receives the attention its importance demands. Some missionary work, perhaps, through our Institute system, should be done.

In live stock, the Shorthorn still holds sway; and more attention is being paid, in a general way, to the rearing of a beefing class of animal rather than a dairy type. Through the energy and perseverance of Mr. Walter T. Goodwin, the cheese factory was operated at Great Shemogue, and gave good satisfaction to patrons. A skimming station was operated at Baie Verte, under the management of the Maritime Dairy Company. With these facilities for handling milk, it seems a pity the fundamental principles of a successful dairy is completely lost sight of.

A strong sentiment exists for a heavier class of horses, and, to meet this, Mr. F. H. Copp, and enterprising and successful breeder of

Shorthorns, has purchased a Clyde stallion. No doubt he will be liberally patronized.

Our annual Fall Show was held on the Society's grounds on September 28th. The day was all that could be desired, and a large attendance manifested their interest in agriculture, and the work of the Society in general. The exhibits were good, except in root department, which was not as good as if the show were held at a later date. We are deeply indebted to a number of ladies and gentlemen from Amherst, Sackville, Sussex, and other places, who assisted in the arduous, and, sometimes, unthankful work of placing the awards.

The usual importation of seeds was made in the spring. This seems to be an important part of the Society's usefulness.

A live Institute, consisting of one hundred and seventy-three members, exists in connection with the Society.

J. R. TAYLOR, Secretary.

SOCIETY FOR DISTRICT No. 17, WESTMORLAND COUNTY.

President—Frank Trueman, Upper Point de Bute.
Secretary—Frank A. Dixon, Sackville.
Treasurer—John T. Carter, Sackville.

INCOME.

Balance from previous year	$ 46 05	
Subscriptions and donations (103 members)	266 55	
Provincial grant	193 00	
Sale of seeds	473 99	
Other sources	939 68	
		$1,872 27

EXPENDITURE.

Paid premiums	$667 20	
Seeds and expenses	345 79	
Expenses of show	65 14	
Allowance to officers	40 00	
Expenses delegates to F. and D. Association	12 50	
Treasurer Farmers' Institute	25 75	
Other expenses	460 86	
		$1,617 24
Balance on hand		$255 03

JOHN T. CARTER, Treasurer.

REPORT.

The winter of 1904-05 closed in early, and proved rough and cold, with exceptionally deep snows. Lumbering was interfered with to quite an extent. The lumber manufactured commanded a fair price —$9.00 being the price received.

Owing to the scarcity of hay last fall, farmers sold their cattle to feeders at abnormally low prices; and in the spring they were put on the market, bringing $10.00 a hundredweight—the highest price reached for years. This fall finds us with a scarcity of cattle in the country, and one dollar a hundredweight more is paid than at this time last year.

Spring opened up favourably for getting in the seed, and a larger acreage than formerly was sown. The summer was dry, affecting the root crop very materially—the potatoes rotting badly. Early sown grain yielded a heavy return, while that of ten days later was light as usual.

Hay during the winter and spring brought ten dollars loose, but prospects of good crops caused a decline, and there is plenty offering at $7.25. This being a hay producing section, we are strong competitors with Quebec and Ontario farmers. The through freight rates granted to the Upper Province shippers enables them to place hay in St. John and Halifax to the detriment of our farmers, while our shippers do not get a like rate Westward bound.

Apples are some grown, but the deep snow of last winter considerably damaged the trees in a number of instances.

The cultivation of strawberries is on the increase, and considerable quantities are exported.

We still keep the Shorthorn stock to the front as our beef-producing stock. Our Society has offered premiums on the Hereford stock, but as yet no purchases has been made. A few of our farmers still cling to the Jersey and Ayrshire, but the large majority find most profit in Shorthorn stock.

Heavy draft horses, sired by purebred Clydlesdale, are in good demand, selling from $150 to $250 at three years old. We had access to three Clydesdale stallions during the season. Throughout the country the small horse takes the lead, and can be bought for from $60 to $100.

During the winter pork was very low, bringing only 6 cents. With pork at that price, and Ontario feeds at $25 a ton, hogs were put on the market to such an extent that now butchers find it almost impossible to buy local pork, and have to import it from Ontario.. It commands 8 1-2 cents. Our farmers seem to make the mistake of forcing produce on a glutted market, and, when a reaction sets in, there is no supply, instead of holding on till prospects are better.

Sheep are getting scarcer every year, the dog being the great sheep pest.

Poultry is on the increase, some giving a good deal of attention to this industry.

Generally speaking, the farmer has had a prosperous year, and he is contented, looking forward to the winter with feelings of security, being well housed, and having full store-houses.

Our annual exhibition was held on the 3rd and 4th of October, and we were favoured with fine weather and large attendance. It is to be regretted that the exhibits were small in number. Within the building the show was very slim. Ladies' fancy work, and manufactured articles, while good specimens were shown, showed a marked falling off. Roots, apples, grain, and dairy produce, while good samples were shown, were far too small in number. Cattle and horses showed up well, and were of a superior class. Sheep and swine were scarce, while poultry showed up well.

The innovation of charging an entry fee had the effect of weeding out spurious exhibits; and while it affected the show as to quantity, it had the added effect of enhancing its quality. The Directors made the mistake of grouping in certain classes, which another year can be rectified.

A movement was started during the summer to enlarge the track independent of the Society. Sufficient capital was subscribed, and negotiations opened with that end in view; but through inability to come together, the project was abandoned for the time being.

It is, in our opinion, advisable that horse trotting in conjunction with the exhibition should be conducted independent of the Society, and it is to be hoped that some such plan as devised last summer may be consummated during the coming year.

W. L. GOODWIN, Secretary.

SOCIETY FOR DISTRICT No. 18, WESTMORLAND COUNTY.

President—Joseph R. Taylor, Taylor Village.
Secretary-Treasurer—P. J. Leger, Memramcook, West.

INCOME.

Balance from previous year	$ 26 24	
Subscriptions and donations (90 members)	100 00	
Provincial grant	120 00	
		$246 24

EXPENDITURE.

Seeds and expenses	$172 43	
Allowance to officers	15 00	
Treasurer Farmers' Institute	22 50	
Other expenses	12 90	
		222 83
Balance on hand		$23 41

PATRICK T. LEGER, Treasurer.

REPORT.

Hay above the average; on the intervales an average crop of good quality. Wheat an average. Oats very light crop. Barley an average. Buckwheat very light crop. Potatoes about seventy-five per cent. of a crop. Turnips good.

Fruit a very good crop.

The Society owns two purebred bulls, and has also bonused a number of purebred animals, including several purebred hogs and bulls.

P. T. LEGER, Secretary.

SOCIETY FOR DISTRICT No. 20, WESTMORLAND COUNTY.

President—Henry Colpitts, Petitcodiac.
Secretary—Harry Douglas, Petitcodiac.
Treasurer—C. F. Alward, Butternut Ridge, Havelock.

INCOME.

Balance from previous year	$202 44	
Subscriptions and donations (50 members)	100 00	
Provincial grant	120 00	
		$422 44

EXPENDITURE.

Paid premiums	$150 75	
Expenses of show	24 25	
Allowance to officers	12 00	
Expenses delegates to F. and D. Association	10 00	
Treasurer Farmers' Institute	12 50	
Other expenses	31 00	
		$240 50
Balance on hand		$181 94

REPORT.

Hay good. Wheat, oats, and barley, fair. Buckwheat almost a failure. Potatoes below the average. Turnips fair. Other roots below the average.

Apples fair, not largely cultivated.

The Society held an exhibition at Petitcodiac on October 9th, and the entries in all classes were well filled.

HENRY DOUGLAS, Secretary.

SOCIETY FOR DISTRICT No. 21, KINGS COUNTY.

President—Col. H. M. Campbell, Apohaqui.
Secretary-Treasurer—A. B. Maggs, Sussex.

INCOME.

Subscriptions and donations (215 members) . .	$ 346 00	
Provincial grant.	204 00	
Services of horse " Dracula ".	262 75	
Other sources.	3,511 91	
Society's deficiency.	415 10	
		$4,739 76

EXPENDITURE.

Paid premiums	$ 887 40	
Balance on horse.	195 90	
Groom, and expenses of horse.	289 48	
Expenses of show.	3,301 98	
Expenses delegates to F. and D. Association . .	5 00	
Allowance to officers.	40 00	
Treasurer Farmers' Institute.	20 00	
		$4,739 76

C. W. STOCKTON, Treasurer for 1905.

REPORT.

The spring was a backward one, and throughout the season there was very little rain at any time. Frost in June and August did some damage. Weather was favourable for gathering crops.

As a rule, the upland hay was a little better yield than the average, while intervale hay was only a fair yield. On the whole, about the same quantity was gathered as in 1904.

Oats suffered in some places on account of the drought, late oats especially. Yield was hardly up to year before. Buckwheat, in sections, was a complete failure, on account of frost; yield much below the average.

Wheat is not largely grown; an average crop.

Root crop in all lines was not up to the average. Potatoes were light, and there was considerable rot.

Fruit not up to previous years, either in yield or quality. Both apples and strawberries were small. They suffered both from frost and drought. Cherries were almost a complete failure. Plums a poor crop.

Cattle.—Ayrshires, Guernseys, and Jerseys continue in favour, and are holding their own. Of these, the Ayrshires are probably the favourites, but Guernseys are on the increase, some very fine specimens being exhibited in 1905. Holsteins, while not numerous, are a fine class.

Horses.—The service of the thoroughbred horse "Dracula" continues in demand, and his colts are showing up well.

Sheep and Swine.—Up to the average.

The Society held an exhibition again this year, from October 2nd to 6th. It is proposed to choose some earlier date for 1906, prior to the Dominion Exhibition, beginning September 22nd.

The Exhibition, it may be said, exceeded all expectation. Roots and grains, considering the unfavourable season, were surprisingly good. Considerable money was expended in improvements in the cattle sheds, and in the erection of a new poultry-house, and in improving the interior of the main building. This accounts for the large deficit at present charged against the Society.

The Society, through the Institute, held a Seed Fair in March, which was well patronized. The matters of good seed and seed selection were discussed by Mr. Broderick. Fine specimens of wheat and oats were shown, and judged by Mr. Wm. Rennie.

C. W. STOCKTON, Secretary, 1905.

Following is reports of two of the Stock Judges:—

SUSSEX, October 6th, 1905.

To the President and Board of Directors of Sussex Agricultural Exhibition,—

GENTLEMEN,—I have pleasure in presenting my report of stock judged at your Exhibition.

In horses, the driving classes in every section was well filled; many of the colts were of particular good merit, showing that your members have been paying close attention to breeding, with the most satisfactory results.

In the general purpose class, in some sections, there was a wide difference in type from the heavy roadster to the light draught. In this class, I would suggest that no stallion be exhibited or awarded a prize in any class unless he is registered in some authorized Stud Book. The leading part that your Society has taken in progressive animal husbandry, and the satisfactory results obtained, I think the time has arrived when it would be unwise for you to any longer offer prizes for entire horses of mixed blood and mongrel breeding.

The Draught had not many entries in stallions; a very good aged one, a three-year-old, of splendid quality, good action, and high merit, but lacking some in weight; a couple of teams; two brood mares, one of which had a nice foal. Evidently your farmers are not giving this line the same attention as they are the harness class.

In Sheep, three breeds were represented—Shropshire, Cotswolds, and Leicesters, and some grades of Cotswolds were a very typical lot, cf good quality, and brought out in fine condition. Leicesters were fair, one or two were fine quality. Shrops were more of the old-fashioned type. Competition in grades was keen. Some nice pairs of Shropshire and long-wooled grades.

Hogs.—Yorkshires and Berkshires were of good quality, and on correct bacon lines; but not enough competition in this line of profitable farm stock.

Yours sincerely,

DUNCAN ANDERSON.

SUSSEX, N. B., October 6th, 1905.

To the President and Executive of the Sussex Exhibition,—

GENTLEMEN,—I take pleasure in presenting my report on the dairy cattle judged by me at your Exhibition, as follows:—

Ayrshires were by far the strongest and best class. I consider the 1st prize two-year-old bull a grand specimen of the breed, of splendid dairy conformation and type. I think there was a noticeable improvement in the young bulls, the class between 6 and 12 months was a very fine lot. Such bulls distributed through the Province will improve the dairy stock very materially. The cows were a grand lot. Some splendid animals were left unplaced, being long in milk, or dry. They did not show the development of udder we like to see in the show ring. The young cows were well up to the mark. Many of the heifers were extra good; a few were not very true to type, and lacked quality. In the calves class were noticed some animals very true to Ayrshire type and conformation, and we expect something good from them in the future.

Jerseys.—These were a good lot on the whole, competition not so keen. The aged bulls were splendid specimens of the breed, as were some of the cows, showing good breeding and producing qualities. The heifers and calves were a nice lot, and we expect to see them devlop into splendid dairy cows of the breed.

Guernseys were not as strong a class, while a few were only fair animals; yet the majority were true to type, of good quality, and good producers.

Holsteins were a small class, and, with two or three exceptions, were a very ordinary lot.

In dairy grades, there was a large exhibit of exceptionally fine dairy cows, large, of good conformation, splendid udders, and good teats. The difficulty in this class was to do justice to the breeds. The practice of putting Aryshire and Holstein grades against Jersey and Guernsey grades is becoming obsolete, except in the dairy test. And I would recommend, where you have so many fine dairy grades of the several breeds, that you make a change in this respect, by re-arranging Classes 11 and 12, as follows:—

Class 11.—Ayrshires and Holstein Grades.
Class 12.—Guernsey and Jersey Grades.
Class 13.—Best 5 Ayrshire or Holstein Grade Milch Cows.
Class 13.—Best 5 Guernsey or Jersey Grade Milch Cows.

My reasons for this are as follows: The Ayrshire and Holstein grades are nearer the general purpose cow than the butter breeds. In judging the former, we take into consideration size as well as conformation and productive capacity. They are suitable to produce milk for city trade, cheese factory, or creamery; cream for city trade, or manufacture of butter in the home dairy; and may turn out a good-sized carcass for beef when required.

The Guernsey and Jersey excel as butter and cream producers, and should be judged from that standpoint very largely.

In Class 14, the animals shown were only young heifers in good flesh, and could not be considered fat animals. Rightly speaking, fat cattle are animals ready for the butcher's block, well fleshed and meaty. There may be a place for this class, but it should be animals of the latter type; no animal under two years should be eligible.

I would recommend the levelling and enlarging of the cattle ring.

The whole I respectfully submit.

Yours very respectfully,

W. F. STEPHEN, Judge.

SOCIETY FOR DISTRICT No. 22, KINGS COUNTY.

President—W. D. Fowler, Hampton.
Secretary-Treasurer—Jas. E. Hoyt, Hampton.

INCOME.

Balance from previous year	$561 77	
Subscriptions and donations (96 members)	100 00	
Provincial grant	120 00	
Sale of fertilizers	200 00	
Sale of seeds	535 00	
Other sources, rent of hall, etc.	71 87	
		$1,588 64

EXPENDITURE.

Paid premiums	$173 33	
Fertilizers and expenses	81 03	
Seeds and expenses	614 31	
Expenses of show	41 28	
Allowance to officers	12 00	
Expenses of delegates to F. and D. Association	6 00	
Treasurer Farmers' Institute	24 00	
Interest on mortgage, other expenses	93 26	
		$1,045 21
Balance on hand		$543 43

JAS. E. HOYT, Treasurer.

REPORT.

Upland hay a good average; marshes light. Oats and barley good. Buckwheat almost a total failure on account of frosts. Roots good. A good deal of trouble from cut wrm.

Fruit below the verage. A good many trees were killed last spring.

Stock of all kinds is steadily improving. Farmers are feeding more short feed and growing more roots. The feed bill is getting to be a serious question, as, with larger demands, prices are going higher all the time.

The Society handled seeds and fertilizers for members, as usual. Our seed policy is doing a great deal of good. The fertilizers I am not so sure of; but we must have a certain amount of it, as it does a certain amount of good if used right.

The usual show was held in October, and was a success in all its branches. The show of roots was said to be equal in quality to anything in that line at any of the Maritime Exhibitions. Stock was also very good.

I am a little doubtful about the benefit of these shows, but they seem to be a necessary evil.

JAS. E. HOYT, Secretary.

SOCIETY FOR DISTRICT No. 23, KINGS COUNTY.

President—L. T. Crawford, Kingston.
Secretary-Treasurer—O. W. Wetmore, Clifton.

INCOME.

Balance from previous year	$ 40 78	
Subscriptions and donations (142 members)	217 00	
Provincial grant	183 00	
Sale of fertilizers	4,204 24	
Sale of seeds	447 04	
Payment on loan	766 20	
Sale of stock	58 21	
		$5,916 47
Carried forward,		$5,916 47

Brought forward,		5,916 47

EXPENDITURE.

Fertilizers and expenses	$4,284 36	
Seeds and expenses	392 67	
Loan and interest	1,108 00	
Allowance to officers	20 00	
Expenses delegates to F. and D. Association	14 91	
Treasurer Farmers' Institute	35 50	
Other expenses	21 19	
		$5,876 63
Balance on hand		$39 84

O. W. WETMORE, Treasurer.

REPORT.

A very good growing season early, but very dry in mid-summer and early fall, affecting mostly all kinds of crops. Hay crop not much affected, as it had matured before the dry spell. This crop above the average, as it seemed to be an ideal spring for meadows. Very little was winter-killed. Only a few fields of clover are grown in the district; but it should be grown more extensively, and there would not be so much variation in the hay crop with the different seasons.

Oats are grown more extensively than any other grain. The crop was above the average and of fine quality; season not very good for harvesting. Buckwheat a very short crop. Wheat hardly grown at all.

Potatoes a fair crop early, but rotted badly later on in the season, as fall was wet. Turnips a good crop. Sugar beets and mangels a good average. When systematically cultivated, nearly all the root crops did well. Regular cultivation during the dry weather has a marked effect on all crops.

An off year for apples generally, but some small young orchards did well. The North Star seems to succeed particularly well in this district, and is a fairly good keeper, and a favourite on the market. Strawberries a fair crop, and realized good prices.

The Society again purchased fertilizers and seeds, and both gave good satisfaction. We got root and garden seeds, as well as the clover and timothy, and found that by ordering direct from a good firm, the seeds turn out true to name, and of best quality. The past season was particularly satisfactory, as seeds were, without exception, true to name, and the clover and timothy pretty clear of noxious seeds. We did not do anything in stock the past season, bue the intention is to purchase a number of animals the coming season. Our good average membership is kept up to a great extent by our handling fertilizers in the unmixed state They give every satisfaction for all kinds of crops; and, as each member does his own mixing, he knows just what he has got. As no firm handles fertilizers this way direct to the farmers, we consider we are doing a good work in this line, as you want the best you can get, if fertilizers must be used.

O. W. WETMORE, Secretary.

SOCIETY FOR DISTRICT No. 26, CHARLOTTE COUNTY.

President—A. C. Pool, Pennfield Centre.
Secretary-Treasurer—Enos C. Justason, Pennfield.

INCOME.

Balance from previous year	$162 09	
Subscriptions and donations (62 members)	100 00	
Provincial grant	120 00	
Sale of stock	17 00	
Sale of seeds	87 00	
		$486 09

EXPENDITURE.

Paid premiums	$156 65	
Seeds and expenses	90 00	
Expenses of show	22 40	
Allowance to officers	22 00	
Farmers' Institute	15 50	
Other expenses	54 00	
		$360 55
Balance on hand		$125 54

ENOS C. JUSTASON, Treasurer.

REPORT.

Hay above the average. Grain crops good, but, on account of foggy weather, hard to gather. Roots above the average.

Fruit not more than half a crop; a heavy spring frost did much damage.

The Society continues to import Shorthorn bulls, and a great improvement is noticeable, because of this policy of not mixing the breeds. Last season a Hackney stallion was brought into the district by R. McIntyre, and is well thought of.

The people seem to be taking more interest in the work of the Society. A show was held in the fall, which was well patronized, and the various departments were well filled.

The annual meeting was well attended, and much interest was manifested.

E. C. JUSTASON, Secretary.

SOCIETY FOR DISTRICT No. 27, CHARLOTTE COUNTY.

President—John Taggart, Bocabec Cove.
Secretary—Patrick McLaughlin, St. George.
Treasurer—John W. Stevenson, Elmsville.

Balance from previous year	$93 36
Postage expense	02
Balance on hand	$93 34

No business done.

JOHN W. STEVENSON, Treasurer.

SOCIETY FOR DISTRICT No. 29, QUEENS COUNTY.

President—Chas. L. Slipp, Mouth of Jemseg.
Secretary—Fred. J. Purdy, Mouth of Jemseg.
Treasurer—John W. Foshay, Mouth of Jemseg.

INCOME.

Balance from previous year..	$242 59	
Subscriptions and donations (51 members)	51 00	
Provincial grant..	73 00	
		$366 59

EXPENDITURE.

Bad debts....	$153 96	
Other expenses..	8 00	
		$161 96
Balance on hand..		$204 63

JOHN W. FOSHAY, Treasurer.

REPORT

Hay an average crop on the highlands; on the intervales about seventy-five per cent. of an average. Oats about seventy-five per cent. of a crop. Buckwheat about fifty per cent. Turnips about seventy-five per cent.. Mangels, carrots, and beets, about seventy-five per cent. Apples about seventy-five per cent.

F. J. PURDY, Scretary.

SOCIETY FOR DISTRICT No. 34, YORK COUNTY.

President—John A. Campbell, M. P. P., Springhill.
Secretary—W. S. Hooper, Box 150, Fredericton.
Treasurer—J. W. McCready, Fredericton.

INCOME.

Balance from previous year	$ 646 00	
Subscriptions and donations (207 members)	207 00	
Provincial grant (annual)	376 00	
Provincial grant (Exhibition)	3,000 00	
City of Fredericton grant (Exhibition)	1,000 00	
Other sources, Exhibition	9,085 57	
		$14,314 57

EXPENDITURE.

Paid premiums	$4,473 00	
Expenses of Exhibition, 1905	7,467 86	
Allowance to officers	803 60	
Other expenses	809 52	
		$13,553 98
Balance on hand		$760 59

J. W. McCREADY, Treasurer.

REPORT.

Spring opened dry and fairly warm. Summer was dry, with the exception of the month of June, and, as a whole, was a good growing season.

Hay was an average crop all over this section, and was well stored. Oats were also an average crop; but straw was on the short side, on account of the dryness of the season. Buckwheat was a fair crop, but in some sections was injured by the early frosts. Barley was also an average crop. There is very little wheat grown in this section.

Potatoes were an unusually good crop, and fine quality. Turnips were also a good crop. Mangels, beets, and carrots were an average crop, and good quality.

More beans were raised in this section this year than usual, and were an excellent crop.

The first part of 1905 tested the hardiness of many varieties of apple trees, and left its mark on the orchard. Small fruits wintered well, and gave a good average crop, that sold for paying prices. Plum orchards were badly winter-killed, and little fruit was the result. The drought of July and August retarded the growth of the apple crop, but the September rains helped it out very much, so that the yield from the orchard at picking time was better than that expected earlier in the season, a fair estimate being about 60 per cent. of a full crop. The quality was very good, but rather under-sized, on account of the summer drought.

Several pure-bred Shorthorn and Holstein bulls were purchased at the 1905 Exhibition by breeders in this section, and in a year or two good results may be expected. The Government horse importation of a few years ago, also the private enterprise of Mr. H. C. Jewett, is already showing results, and the former " skate," driven by the average farmer of this section, is now a thing of the past, and his place taken by the good-sized, well-formed, up-to-date, high-stepping horse. This is as it should be; the end is not yet, and still better results are looked for.

More swine were raised this year than ever before; and, as prices on pork still have a tendency upwards, and the demand being on the increase, our local farmers are making preparations for still further increase in this profitable branch of farm production.

The farmer in this section has yet to grapple with the sheep question; and in this part of the country, more especially along the St. John River, the subject is of vital importance, as no better conditions exist anywhere than here for profitable sheep raising; and yet, in the face of these conditions, no sheep are raised. Within a radius of five miles of the City of Fredericton are many farms on which not even one sheep can be found, and for the only reason that the dog nuisance still exists; and as long as these conditions remain, no sheep-raising to any extent will be attempted by the local farmer. Several of the Executive of this Society are very much in earnest to the end that the sheep-raising conditions in this section be improved, and at the first meeting of the Executive it is proposed to fully discuss the matter, and, all things being equal, I think the Society will make a good grant for the purpose of importing some pure-bred sheep.

The bi-annual Exhibition, under the auspices of this Society, was held on the Society's grounds, Fredericton, on September 21st, and closing on the 27th, running six days, and was an unqualified success in every particular, notwithstanding the fact that rain and cold weather interfered somewhat with the attendance on the fourth and fifth days; but, even in the face of that drawback, a fairly good surplus shows on the year's balance, and we are pleased at the fact that it was not necessary to call on the Provincial Government for the guarantee so generously offered.

Our endeavour has always been to satisfy exhibitors and please the visitors, and this year's show was even more to the front in that direction than any we ever held, and drew from the cattle exhibitors a memorial, signed by every one who exhibited in that division, expressing their great appreciation of the way they had been looked after, and promising to "always come to the Fredericton Exhibition in future years."

The main buildings were well filled with industrial exhibits, and many intending exhibitors were prevented from exhibiting on account of the lack of space to accommodate them.

Every division in which there was competition, except the Dairy Department, was well filled, and the competition keen. We were again disappointed in the Dairy Department, which, notwithstanding the unusually large premiums offered, did not fill as it should have; but the exhibits, though small in number, were excellent in quality; but our own Province was greatly in the background when it came to the score card, Prince Edward Island winning the bulk of the money.

The exhibit of horses was not as good as in 1903, although in many cases the premiums offered were larger; but Fredericton was no exception to other Exhibitions held this year. In the other Provinces, I believe, the Horse Departments were not up to the average, and it is evident that it was an off year for that particular line.

The Cattle Department was the very best ever seen in this section of the country, and would be hard to beat at any of the shows making greater pretensions than we do. Almost every known breed of purebred stock was on exhibition, and this Department was looked upon as one of the great features of the show, and attracted great interest.

The premiums in the Sheep and Swine Departments were considerably increased over that of 1903, but, much to our disappointment, the exhibits did not show a corresponding increase, as they should, and for which we hoped; but the display was very creditable in both Departments, and the competition keen in many sections.

The Poultry Department was one of the most attractive features of the show, and was crowded with visitors from opening to closing. This Department was greatly enlarged this year, the premium list extended, both in number and amount, of the prizes offered, and the result was greatly to our satisfaction.

In the Agricultural and Horticultural Departments the exhibits were fully up to the standard, if not in excess of 1903. Potatoes, turnips, and grain were a particularly good showing, and the well-arranged roots were gratifying to look at. The exhibits were large in number, and the quality excellent. The showing of corn, while not large, was creditable under the circumstances. Horticulturist W. S. Blair, of the Nappan Experimental Farm, was present with a splendid exhibit of grains, fruits, etc.; and the unusual taste displayed in the arrangement of the various specimens brought out words of praise from everybody. This exhibit was placed in the centre of the main building, and was greatly admired and favourably commented upon by visitors.

New Brunswick fruit growers may well feel proud of the showing they made in the Fruit Department, and congratulate themselves on the prizes won, when in competition with some of the most successful fruit growers in the famed Annapolis Valley. This, considering the off year, was exceptionally good, and Major Sheppard, who judged, was much pleased with the showing. Mr. B. T. Boies, of Vernon, B. C., an expert fruit man, thought the quality excellent, and the shipping prospects good. There was a grand showing of varieties, and the Department was a pleasing sight to all visitors, and very gratifying to the management.

Through the kindness of Deputy Commissioner for Agriculture Peters, we were enabled to have the services of expert judges from the Agricultural Department at Ottawa, and, it is needless to say that their decisions gave every satisfaction, both to the exhibitors and to our Association.

Our Executive have chosen September 24th to 29th, 1907, as the dates of our next Exhibition, and we hope to have even a still more successful show than this year's, and feel that our past experience will assist in making it even more attractive than any yet held by this Association.

W. S. HOOPER, Secretary.

SOCIETY FOR DISTRICT No. 35, YORK COUNTY.

President—M. W. Crotty, Stanley.
Secretary-Treasurer—D. J. Griffiths, Stanley.

INCOME.

Subscriptions and donations (52 members)	$102 00	
Provincial grant	165 00	
Rents and amounts received from horse	670 08	
		$937 08

EXPENDITURE.

Balance due Treasurer last account	$ 5 45	
Paid premiums	215 30	
Expenses of stallion	294 12	
Interest on mortgage	39 20	
Expenses of show	60 60	
Allowance to officers	40 00	
Expenses delegates to F. and D. Association	5 00	
Printing	8 45	
Treasurer Farmers' Institute	13 00	
Paid on stallion	165 00	
Other expenses	57 87	
		$903 99
Balance on hand		$33 09

D. J. GRIFFITHS, Treasurer.

REPORT.

Hay an average, and well stored. Oats about sixty per cent. of an average. Wheat an average. Buckwheat about seventy-five per cent. Potatoes about sixty per cent. Flies and grub interfered seriously with the turnip crop.

The Clydesdale stallion purchased by the Society from the Government has been of great benefit to the parties that patronized him, and some of his colts have been sold for good prices. This stallion was recently sold to Mr. John McCoy, of Fredericton, who, we trust, will travel him in our district.

The Society held their annual show on October 4th and 5th. The weather on both days was all that could be desired, and the attendance good. Exhibits were good in all departments.

On the 12th and 13th of October our Institute meetings were held, and the meetings were better attended than they have been since the work was commenced. The farmers are awakening to the fact that the Institute meeting is an important educational factor.

D. J. GRIFFITHS, Secretary.

SOCIETY FOR DISTRICT No. 36, YORK COUNTY.

President—Albert E. Kilburn, Macnaquac.
Secretary—Joseph Hawkins, Douglas.
Treasurer—Arthur W. Ross, Douglas.

INCOME.

Balance from previous year	$52 36	
Subscriptions and donations	46 00	
Provincial grant	99 00	
		$197 36

EXPENDITURE.

Allowance to officers	$10 00	
Treasurer Farmers' Institute	5 75	
Other expenses	8 50	
		$24 25
Balance on hand		$173 11

ARTHUR W. ROSS, Treasurer.

SOCIETY FOR DISTRICT No. 37, YORK COUNTY.

President—Peter Johnston, Millville.
Secretary—S. A. Jones, Millville.
Treasurer—Geo. M. Sleep, Upper Haynesville.

INCOME.

Balance from previous year	$ 27 21	
Subscriptions and donations (99 members)	103 00	
Provincial grant	120 00	
Sale of stock	46 00	
		$296 21

EXPENDITURE.

Stock and expenses	$205 45	
Allowance to officers	12 00	
Treasurer Farmers' Institute	25 75	
Other expenses	5 00	
		$248 20
Balance on hand		$48 01

GEO. M. SLEEP, Treasurer.

SOCIETY FOR DISTRICT No. 38, YORK COUNTY.

President—Josiah Lawrence, Lower Prince William.
Secretary—Nemiah Hoyt, Lower Prince William.
Treasurer—W. B. Barker, Kingsclear.

INCOME.

Balance from previous year	$476 92	
Subscriptions and donations	75 00	
Provincial grant	106 00	
Sale of stock	98 00	
		$755 92
Carried forward,		$755 92

Brought forward,		$755 92

EXPENDITURE.

Bad debts written off	$ 86 90	
Stock and expenses	284 00	
Allowance to officers	20 00	
Delegates to D. and F. Association	18 00	
		$408 90
Balance on hand		$347 02

W. B. BARKER, Treasurer.

REPORT.

Spring opened fine, cool and dry—crops were put in the ground in good shape. Hay a very large crop, in excess of last year. Grain and root crops below the average. Apples and plums almost a failure.

Instead of holding a show last year, the Society invested its money in purebred stock, and we hope to see an improvement in this district as a result.

N. E. HOYT, Secretary.

SOCIETY FOR DISTRICT No. 39, YORK COUNTY.

President—Walter Piercy, Coburn.
Secretary-Treasurer—Wm. McCulloch, Coburn.

INCOME.

Balance from previous year	$ 80 90	
Subscriptions and donations (97 members)	91 79	
Provincial grant	110 00	
Seeds and fertilizers	868 04	
Other sources	14 95	
		$1,165 68
Carried forward,		$1,165 68

Brought forward		$1,165 68

EXPENDITURE.

Stock and expenses	$137 40	
Seeds, fertilizers, and expenses	868 04	
Allowance to officers	10 00	
Treasurer Farmers' Institute	22 75	
Other expenses	99 31	
		1,137 50
Balance on hand		$28 18

WM. McCULLOCH, Treasurer.

SOCIETY FOR DISTRICT No. 40, CARLETON COUNTY.

President—Milton J. Green, Union Corner
Secretary—B. D. Hoyt, McKenzie Corner.
Treasurer—J. R. Kirkpatrick, Debec.

INCOME.

Balance from previous year	$115 91	
Subscriptions and donations (42 members)	100 00	
Provincial grant	118 00	
Sales of stock	44 25	
Sale of seeds	485 36	
Other sources	10 26	
		$873 78

EXPENDITURE.

Stock and expenses	$151 03	
Seeds and expenses	511 04	
Allowance to officers	25 00	
Delegates to Fat Stock Show	10 00	
Treasurer Farmers' Institute	10 50	
Other expenses	78 95	
		786 52
Balance on hand		$87 26

J. R. KIRKPATRICK, Treasurer.

REPORT.

The past season was very, very dry. Hay fair in some sections; on high, dry ground, very light. Wheat good. Oats light crop. Buckwheat below the average. Season too dry for a good root crop. Fruit very light.

The Society did not hold a show this year. Eight pure-bred sheep were imported and sold to farmers. We are working along the line of improving the sheep of the district.

B. D. HOYT, Secretary.

SOCIETY FOR DISTRICT No. 41, CARLETON COUNTY.

No returns received from this Society.

Officers last year were:—

President—Judson Briggs, Lindsay.
Secretary-Treasurer—C. L. Smith, Woodstock.

Balance on hand, December 1st, 1904..	$19 56

SOCIETY FOR DISTRICT No. 44, CARLETON COUNTY.

President—Wm. J. Owens, Tracey Mills.
Secretary—Julien E. Long, Long P. O.
Treasurer—Henry T. Scholey, Centreville.

INCOME.

Balance from previous year..	$135 16	
Subscriptions and donations (100 members)	130 50	
Provincial grant..	155 00	
Sale of stock..	12 25	
Other sources..	308 88	
		$741 79
Carried forward,..................................		$741 79

Brought forward,		$741 79

EXPENDITURE.

Paid premiums	$150 55	
Stock and expenses	18 00	
Delegates to F. and D. Association	7 50	
Treasurer Farmers' Institute	25 00	
Other expenses	444 73	
		645 78
Balance on hand		$96 01

H. T. SCHOLEY, Treasurer.

REPORT.

Hay about seventy-five per cent. of an average crop. Oats not over seventy-five per cent., but of excellent quality. Wheat a full crop, of A1 quality. Buckwheat poor, and not over half a crop. Potatoes a small crop, of good quality. Apples fair.

For the last two years we have not imported much stock, on account of building operations and paying for grounds.

Our Exhibition building and grounds are in very good condition, and we consider we have made a very creditable showing for the three years which it took to do so.. Our Exhibition, on October 4th, was attended by probably the largest crowd ever collected at Centreville—there were 1,592 paid admissions to the grounds. The show of cattle was not large, but good. People qualified to judge, said the horses could not be surpassed at any show in the Maritime Provinces. There was a large and excellent show of apples. Roots and vegetables were also good. The public generally were well satisfied, and the generous receipts were the means of placing the Soceity out of debt.

JULIEN E. LONG, Secretary.

SOCIETY FOR DISTRICT No. 45, CARLETON COUNTY.

President—G. B. Reid, Glassville.
Secretary—John McIntosh, Glassville.
Treasurer—John McIntosh, Glassville.

INCOME.

Balance from previous year..	$ 11 22	
Subscriptions and donations (65 members).. ..	80 00	
Provincial grant....	109 00	
Sales of stock..	65 00	
Seeds and implements	766 00	
Other sources	3 00	
		$1,034 22

EXPENDITURE.

Stock and expenses..	$154 69	
Seeds and implements	833 38	
Allowance to officers..	10 00	
Other expenses..	14 00	
		$1,012 07
Balance on hand..		$22 15

W. A. HANNINGTON, Treasurer for 1904.

REPORT.

Hay a good average, and well stored. Wheat an excellent crop. Oats fair. Straw short, but grain of the very best qualtiy. Barley good. Buckwheat very poor. Potatoes below the average, but of good quality. Turnips fair. Apples poor, damaged by spring frosts. Small fruits poor.

The Society bought a large quantity of the best seed and sold to farmers at cost.

The policy of the Society has been to invest its funds in pure-bred stock, rather than the holding of shows, and, under the circumstances, it is very hard to keep up the membership. Next season we think the usual show will be held.

W. A. HANNINGTON, Secretary for 1905.

SOCIETY FOR DISTRICT No. 46, VICTORIA COUNTY.

President—Frank Baird, Bairdsville.
Secretary—D. W. Pickett, Andover.
Treasurer—David Curry, Tobique River.

INCOME.

Balance from previous year	$ 40 84	
Subscriptions and donations (34 members)	34 00	
Provincial grant	98 00	
Sale of stock	6 50	
Sale of seeds	4 90	
		$184 24

EXPENDITURE.

Stock and expenses	$ 15 50	
Allowance to officers	4 35	
Delegates to F. and D. Association	10 00	
Treasurer Farmers' Institute	8 50	
Other expenses	108 50	
		146 85
Balance on hand		$37 39

F. E. HENDERSON, Treasurer for 1905.

REPORT.

Hay not up to the average, but of good quality. Oats poor, although some farmers report good yields. Wheat good. Buckwheat half a crop. Potatoes a good crop, of excellent quality. Turnips poor. Apples a very light crop. A large number of trees were winter-killed.

The Institute meeting at Andover was well attended. The speakers gave a great deal of valuable information on the judging of horses and cattle.

D. W. PICKETT, Secretary.

SOCIETY FOR DISTRICT No. 48, VICTORIA COUNTY.

President—Andreas C. Jensen, Foley Brook.
Secretary-Treasurer—Anders J. Jensen, Salmonhurst.

INCOME.

Balance from previous year	$ 51 81	
Subscriptions and donations (56 members)	100 00	
Provincial grant	120 00	
Sale of stock	24 45	
		$296 26

EXPENDITURE.

Stock and expenses	$ 42 50	
Keep of stock	90 00	
Allowance to officers	11 00	
Treasurer Farmers' Institute	14 00	
Other expenses	20 20	
		177 70
Balance on hand		$118 56

ANDERS J. JENSEN, Treasurer.

REPORT.

Spring opened cold and backward. The first part of the season was ideal for the growing crops; the latter part and fall remarkable for the absence of rain.

Hay an average. Grain above the average. Potatoes above the average; the acreage is yearly increasing in this district.

Apples are about the only fruit grown to any extent here, and were an average crop this year. An illustration orchard was located here by the Government, from which we expect good results in the way of teaching the people how to care for young trees, and the proper care of an orchard in general. Large sums of money and a good deal of work have been wasted, simply because young orchards have been improperly cared for; and too often varieties have been planted not at all suited for the locality. If some of these troubles can now be eliminated, the illustration orchard will have proved a good investment.

While we are making some progress as a Society, there is abundant room for improvement. The funds at our disposal are altogether inadequate; and, instead of increasing, they are growing smaller each year. Societies, generally speaking, should have larger funds at their disposal; and if the farmers would only look at the matter in the proper light, there would be no difficulty in securing subscriptions of five, or even ten dollars, from each member—and how could a farmer make a better investment, if the funds were used judiciously? With larger funds, new lines of work might be taken up; we might mention one especially—in a dairy section like this, attention might be given to the breeding, and feeding, and weeding out of animals—weeding out the animals that are being kept at a loss. If a sum were spent in weeding out, as heretofore has been spent in importing new stock, it is not unlikely that the income from each cow would be doubled in a few years. This would involve the employment of a travelling instructor for three or four months out of the year, whose duty it would be to take samples of milk direct from the cow, and test the same, making up statements, assist in making up balanced and profitable rations. After travelling over the district, he could give suggestions for improvements and criticisms at a public meeting. It would be well if several neighbouring Societies would amalgamate, and work along this line. If the $250 per year which our Society has been spending for the past ten years in importing stock were spent as outlined above, there can be no doubt but that the results would amply justify the outlay.

There are other lines of improvement which could be followed up if larger funds were at hand, such as establishing farmers' libraries, purchasing fertilizers, machinery, and stock.

ANDERS J. JENSEN, Secretary.

SOCIETY FOR DISTRICT No. 50, MADAWASKA COUNTY.

President—Dolphis Daigle, St. Basil.
Secretary-Treasurer—D. I. Daigle, St. Basil.

INCOME.

Balance from previous year	$ 49 17	
Subscriptions and donations (46 members)	92 00	
Provincial grant	125 00	
Sale of stock	10 00	
Sale of seeds	16 54	
Other sources	17 77	
		$300 48

EXPENDITURE.

Paid premiums	$120 00	
Stock and expenses	48 55	
Seeds and expenses	19 31	
Expenses of show	13 25	
Allowance to officers	12 00	
Treasurer Farmers' Institute	11 50	
Other expenses	20 56	
		245 17
Balance on hand		$55 31

D. I. DAIGLE, Treasurer.

REPORT.

Hay an average, and well stored. All grains about an average; owing to wet weather at first of harvest, some was stored in very bad condition. Roots a good crop, of good quality. Fruit of all kinds very poor. Apple trees were badly injured by the cold weather of last winter, and late frosts in the spring.

D. I. DAIGLE, Secretary.

SOCIETY FOR DISTRICT No. 51, ST. JOHN COUNTY.

President—Dr. T. Fred. Johnston, St. John.
Secretary-Treasurer—R. R. Patchell, St. John.

INCOME.

Balance from previous year	$108 99	
Subscriptions and donations (52 members)	151 35	
Provincial grant	146 00	
Other sources	45 00	
		$451 34

EXPENDITURE.

Paid premiums	$228 50	
Expenses of show	21 80	
Allowance to officers	50 00	
Delegates to F. and D. Association	5 00	
Treasurer Farmers' Institute	13 00	
Interest, insurance, taxes	106 30	
Other expenses	33 50	
		$458 10
Balance due Treasurer		$6 76

R. R. PATCHELL, Treasurer.

REPORT.

Hay very good, and well saved. Root crops good, very little rot. Oats and buckwheat very good. Fruit not grown to any extent. The illustration orchards set out at Golden Grove this season did very well, and is in fine shape to stand the winter.

R. R. PATCHELL, Secretary.

SOCIETY FOR DISTRICT No. 52, ST. JOHN COUNTY.

President—Wm. T. Boyle, Golden Grove.
Secretary-Treasurer—Alex. F. Johnston, Upper Loch Lomond.

INCOME.

Balance from previous year	$ 88 95	
Subscriptions and donations (41 members)	79 00	
Provincial grant	112 00	
		$279 95

EXPENDITURE.

Paid premiums	$141 05	
Expenses of show	24 25	
Allowance to officers	9 55	
Delegates to F. and D. Association	7 00	
Treasurer Farmers' Institute	10 25	
		192 10
Balance on hand		$87 85

ALEX. F. JOHNSTON, Treasurer.

REPORT.

Hay a fair crop on uplands; intervales and low-lying lands not so good. Quite a lot of hay was ruined on account of scarcity of help for handling the crop. Oats a good, fair crop. Straw bright, and grain well filled. Buckwheat a failure on account of the late frost. Not much wheat grown. Potatoes suffered from both early and late blight; not an average crop. Turnips below the average.

Apples very little grown. The illustration orchard, planted under the auspices of the Department of Agriculture, at Golden Grove, promises well, and is eagerly watched for results.

The annual fair was held at Ben Lomond on 10th October. The weather was good, and a large crowd attended. Roots and grain were not as good as last year, and the number of cattle shown was smaller than usual; but horses were good, and received honourable mention from the judges.

ALEX. F. JOHNSTON, Secretary.

SOCIETY FOR DISTRICT No. 54, ST. JOHN COUNTY.

President—James Rourke, St. Martins.
Secretary—Wm. Smith, St. Martins.
Treasurer—Michael Kelly, St. Martins.

INCOME.

Balance from previous year	$61 10	
Subscriptions and donations	77 00	
Provincial grant	97 00	
		$235 10

EXPENDITURE.

Paid premiums	$126 38	
Expenses of show	20 00	
Allowance to officers	12 00	
Treasurer Farmers' Institute	9 00	
Other expenses	12 52	
		179 90
Balance on hand		$55 20

MICHAEL KELLY, Treasurer.

REPORT.

Hay above the average. Grain good. Roots extra good. The Society holds monthly meetings, and is encouraging agriculture by the judicious use of the funds at its disposal.

WM. SMITH, Secretary.

SOCIETY FOR DISTRICT No. 55, KINGS COUNTY.

President—F. W. C. Nase, Nerepis.
Secretary—D. M. Hamm, Grand Bay.
Treasurer—W. J. Usher, Grand Bay.

INCOME.

Balance from previous year	$302 52	
Subscriptions and donations (50 members)	100 00	
Provincial grant	120 00	
Sale of stock	35 00	
Fertilizers	76 94	
Rent of hall	13 75	
Chemicals on hand	11 31	
		$659 52

EXPENDITURE.

Stock and expenses	$417 54	
Fertilizers	88 25	
Allowance to officers	6 50	
Treasurer Farmers' Institute	12 50	
Other expenses	63 41	
		588 20
Balance on hand		$71 32

WM. J. USHER, Treasurer.

REPORT.

After a winter of deep snows, the spring came early, and farmers were able to get their crops planted in good season. The harvest season was not very favourable, as much fog and wet weather prevailed.

Hay a good average. Quite a large percentage was damaged on account of the wet weather during the harvesting. The grain crop, generally speaking, was very good, with the exception of buckwheat, which was forty per cent. below the average. With some farmers, potatoes were a good yield; others complained of losing most of their crop by rust. Turnips, beets, and carrots about an average.

Cultivation of fruit is receiving more attention, and a large acreage of orchard is being set out each year. The apple crop was short this season.

A good stallion is much needed in this district.

The funds of the Society were expended in purebred stock, and placing the bulls and rams in sub-districts, under such conditions that members might obtain free service of the same.

During the past season, the Society bought four rams and one Ayrshire, one Jersey, one Hereford, and three Holstein bulls. A large portion of this importation went to the Parish of Petersville, and ought to prove a great benefit to members in that part of our district. Fertilizers were handled last spring, as usual, and the farmers seem to be well satisfied with results obtained.

D. M. HAMM, Secretary.

SOCIETY FOR DISTRICT No. 56, ALBERT COUNTY.

President—R. A. Smith, Elgin.
Secretary-Treasurer—F. W. Godard, Elgin.

INCOME.

Balance from previous year	$145 00	
Subscriptions and donations (52 members)	135 65	
Provincial grant	130 00	
Hall rent	11 00	
		$421 65
Carried forward		$421 65

Brought forward		$421 65

EXPENDITURE.

Paid premiums	$140 80	
Expenses of show	10 00	
Allowance to officers	12 00	
Laths for hall	11 40	
Treasurer Farmers' Institute	13 00	
Other expenses	3 92	
		191 12
Balance on hand		$230 53

GEO. M. KILLAM, Treasurer for 1905.

REPORT.

Hay a very good crop. Wheat and barley an average. Oats about half a crop, but good quality. Buckwheat almost a failure. Potatoes poor, although some report a good crop. Turnips below the average. Other roots poor. Apples about an average. Plums poor.

The usual Exhibition was held, and proved fairly successful. Our hall is now nearing completion, and having been delayed on account of the scarcity of labour.

GEO. M. KILLAM, Secretary.

SOCIETY FOR DISTRICT No. 57, ALBERT COUNTY.

President—Abner A. Reid, Upper New Horton.
Secretary-Treasurer—Edgar Cannon, New Horton.

INCOME.

Balance from previous year	$195 08	
Subscriptions and donations (52 members)	104 00	
Provincial grant	120 00	
		$419 08
Carried forwnrd,		$419 08

Brought forward,		$419 08

EXPENDITURE.

Paid premiums	$ 71 75	
Stock and expenses	150 00	
Expenses of show	10 00	
Delegates to F. and D. Association	11 20	
Other expenses	4 15	
		247 10
Balance on hand		$171 88

EDGAR CANNON, Treasurer.

REPORT.

Hay about eighty per cent. of a crop. Early grain an average; late sown, about seventy-five per cent of a crop. Roots hardly an average. Fruit not more than half a crop.

EDGAR CANNON, Secretary.

SOCIETY FOR DISTRICT No. 58, ALBERT COUNTY.

President—G. M. Russell, Hopewell.
Secretary-Treasurer—C. C. West, Hopewell Hill.

INCOME.

Subscriptions and donations (50 members)	$112 50	
Provincial grant	120 00	
		$232 50
Carried forward,		$232 50

Brought forward,		$232 50

EXPENDITURE.

Due secretary, last report	$22 88	
Expenses of stock	48 00	
Treasurer Farmers' Institute	12 50	
Other expenses	1 50	
		84 88
Balance on hand		$147 62

C. C .WEST, Treasurer.

REPORT.

Hay a good crop. Grain hardly an average. Potatoes good. Turnips fair.

Shorthorn cattle are the predominant breed kept in this district.

C. C. WEST, Secretary.

SOCIETY FOR DISTRICT No. 60, VICTORIA COUNTY.

President—W. L. McPhail, Bon Accord.
Secretary—John McB. Ellis, Kincardine.
Treasurer—Alex. Philip, Upper Kintore.

INCOME.

Balance from previous year	$69 39	
Subscriptions and donations (49 members)	49 00	
Provincial grant	99 00	
Sale of stock	11 00	
Transferred from Farmers' Institute	12 25	
		$240 64
Carried forward,		$240 64

Brought forward,		$240 64

EXPENDITURE.

Stock and expenses	$116 70	
Allowance to officers	7 40	
Delegates to F. and D. Association	8 00	
Treasurer Farmers' Institute	12 25	
Other expenses	1 41	
		145 76
Balance on hand		$94 88

ALEX. PHILIP, Treasurer.

REPORT.

Hay a good average, and well stored. Oats about an average. Wheat above the average. Barley good, but little is sown. Potatoes an average; rot unknown. Turnips fair, but not raised to a large extent. Apples a failure.

The Society did not hold an Exhibition this year. A Shorthorn bull was purchased.

JOHN ELLIS, Secretary.

SOCIETY FOR DISTRICT No. 61, SUNBURY COUNTY.

President—H. H. Smith, Blissville.
Secretary—J. S. Hayward, Central Blissville.
Treasurer—J. F. Duplisea, Central Blissville.

INCOME.

Balance from previous year	$102 01	
Subscriptions and donations (61 members)	61 00	
Provincial grant	99 00	
Sale of stock	9 00	
Sale of seeds	188 25	
		$459 26

EXPENDITURE.

Stock and expenses	$136 00	
Seeds and expenses	192 48	
Allowance to officers	12 00	
Other expenses	39 10	
		379 58
Balance on hand		$79 68

J. F. DUPLISEA, Treasurer.

REPORT.

Hay a good average. Oats fair. Buckwheat only half a yield, damaged greatly by frosts. Potatoes a light crop. Turnips and carrots badly damaged by cut worms. Fruit not grown to any extent in this district.

The Society imported and distributed among its members a quantity of seed, which gave general satisfaction; also purchased a Holstein and a Durham bull.

J. S. HAYWARD, Secretary.

SOCIETY FOR DISTRICT No. 62, NORTHUMBERLAND COUNTY.

President—Rev. M. F. Richard, Rogersville.
Secretary—Fidele Richard, Rogersville.

INCOME.

Balance from previous year	$199 66	
Subscriptions and donations (65 members)	130 00	
Provincial grant	122 00	
Sale of seeds	184 00	
		$635 66

EXPENDITURE.

Stock and expenses	$ 52 50	
Seeds and expenses	201 38	
Allowance to officers	20 00	
Treasurer Farmers' Institute	16 25	
		290 13
Balance on hand		$345 53

FIDELE RICHARD, Treasurer.

REPORT.

Hay fair average. All grain crops above the average. Roots good. Fruit poor.

We had no Exhibition this year, considering it a poor investment, for in most cases a few farmers secure all the prizes, and this cannot be considered as advancing agriculture very much. Our aim is to help the struggling farmers, to encourage them in a practical way.

FIDELE RICHARD, Secretary.

SOCIETY FOR DISTRICT No. 65, MADAWASKA COUNTY.

President—Hector Daigle, Michaud.
Secretay—Honoie Cyr, St. Hilaire.
Treasurer—Pierre Collin, Albertine.

INCOME.

Balance from previous year	$176 43	
Subscriptions and donations (50 members)	70 00	
Provincial grant	106 00	
Sale of stock	30 00	
Sale of seeds	255 45	
		$637 88

EXPENDITURE.

Paid premiums	$100 90	
Stock and expenses	14 00	
Seeds and expenses	255 45	
Expenses of show	9 00	
Allowance to officers	8 80	
Other expenses	55 20	
		443 35
Balance on hand		$194 53

PIERRE COLLIN, Treasurer.

REPORT.

Hay not as good as last year. Oats, wheat, and buckwheat better than last year. Potatoes a good yield; some report from 200 to 250 bushels per acre. About 25,000 bushels were raised in this district. Fruit poor.

Our Exhibition was held on 5th October, and was not as well attended as usual. Exhibits were not as good as former years.

Dairying has been very successful in spite of the dry weather. A good many of our farmers are not acquainted with the best methods of feeding and caring for dairy cattle in order to obtain the best results. Nevertheless, the dairy industry continues to increase in this locality.

HONOIE CYR, Secretary.

SOCIETY FOR DISTRICT No. 66, KENT COUNTY.

President—John McKee, McKee's Mills.
Secretary-Treasurer—D. V. Landry, M. D., Buctouche.

INCOME.

Balance from previous year	$261 10	
Subscriptions and donations (125 members)	125 00	
Provincial grant	133 00	
Farmers' Institute grant	15 00	
		$534 10

EXPENDITURE.

Paid premiums	$125 00	
Stock and expenses	55 50	
Other expenses	3 11	
		183 61
Balance on hand		$350 49

D. V. LANDRY, M. D., Treasurer.

REPORT.

Hay a medium crop. Oats and buckwheat an average. Wheat, which is being sown in larger quantities each succeeding year, was a fair crop. The sparrows are becoming quite a nuisance, and destroy a good deal of this crop. Potatoes not an average. Other roots fair. Fruit below the average.

The Society has had a successful year. The meetings were numerous and well attended. Seed was bought and sold to members at cost. The Society rented a bull from a local farmer, and bought a boar pig for the exclusive use of its members.

D. V. LANDRY, M. D., Secretary.

SOCIETY FOR DISTRICT No. 68, GLOUCESTER COUNTY.

President—Rev. J. T. Allard, Caraquet.
Secretary-Treasurer, J. E. Lanteigne, Caraquet.

INCOME.

Balance from previous year	$139 78	
Subscriptions and donations (100 members)	100 00	
Provincial grant	120 00	
Grant to Farmers' Institute	15 00	
Sale of seeds	721 50	
		$1,096 28

EXPENDITURE.

Paid premiums	$100 00	
Seeds and expenses	783 90	
Allowance to officers	11 00	
Treasurer Farmers' Institute	15 00	
Other expenses	18 10	
		928 00
Balance on hand		$168 28

J. E. LANTEIGNE, Treasurer.

REPORT.

Hay a failure. Wheat, barley and oats fair. Potatoes poor, about half as good as last year.

The Society intends purchasing a number of Chester White Swine in the near future.

J. E. LANTEIGNE, Secretary.

SOCIETY FOR DISTRICT No. 69, KINGS COUNTY.

President—Wm. Jamieson, Sussex Corner.
Secretary—James Payne, Hillsdale.
Treasurer—John Jamieson, Clover Hill.

INCOME.

Balance from previous year	$137 83	
Subscriptions and donations (50 members)	100 00	
Provincial grant	120 00	
Rent of hall	5 00	
		$362 83

EXPENDITURE.

Paid premiums	$164 15	
Expenses of show	33 10	
Allowance to officers	10 00	
Treasurer Farmers' Institute	12 50	
Fat Stock Show	5 00	
		224 75
Balance on hand		$138 08

JOHN JAMIESON, Treasurer.

REPORT.

Hay above the average. Oats good. Buckwheat about half a crop, damaged by frost. Roots of all kinds fairly good. Apples good. Small fruits fair.

Our Exhibition was held on October 10th. The day was fine, and the number of exhibits as large as usual. Horses made a good showing; R. McMonagle and Wm. Jamieson had on exhibition two stallions that would be a credit to any district. There were also some fine Ayrshires, the property of H. H. Sherwood, of Upham.

The Society will purchase some purebred cattle next year.

JAMES PAYNE, Secretary.

SOCIETY FOR DISTRICT No. 70, QUEENS COUNTY.

President—A. W. Ebbett, Gagetown.
Secretary—J. W. Dickie, Gagetown.
Treasurer—A. P. Slipp, Upper Hampstead.

INCOME.

Balance on hand from last report	$108 07
Subscription list (59 members)	111 00
Balance on hand	$219 07

A. P. SLIPP, Treasurer.

SOCIETY FOR DISTRICT No. 71, NORTHUMBERLAND COUNTY.

President—E. Mersereau, Blissfield.
Secretary—B. Donald, Upper Blackville.
Treasurer—Ronald Hurley, Gilks.

INCOME.

Balance from previous year	$ 20 51	
Subscriptions and donations (53 members)	100 00	
Provincial grant	120 00	
Sale of stock	37 30	
Sale of seeds	28 20	
		$306 01

EXPENDITURE.

Paid premiums	$ 89 35	
Stock and expenses	38 55	
Seeds and expenses	33 68	
Expenses	11 75	
Allowance to officers	12 00	
Treasurer Farmers' Institute	13 25	
Other expenses	15 00	
		213 58
Balance on hand		$92 43

RONALD HURLEY, Treasurer.

REPORT.

Hay an average. Grain an average. Potatoes unusually good. Turnips good. Fruit below the average in both quantity and quality.

The Society imported purebred pigs and sold to members. A quantity of choice timothy and clover seed was imported, and sold in like manner.

The Annual Fair was held on October 10th at Upper Blackville, and was very successful.

B. DONALD, Secretary.

SOCIETY FOR DISTRICT No. 72, WESTMORLAND COUNTY.

President—Edwin T. Charters, Chartersville.
Secretary—D. D. Leger, St. Anselme.
Treasurer—LeB. D. Lockhart, Moncton.

INCOME.

Balance from previous year	$985 97	
Subscriptions and donations (768 members)	768 00	
Provincial grant	491 00	
Sale of stock	25 00	
Farmers' Institute grant	15 00	
		$2,284 97

EXPENDITURE.

Paid premiums	$203 95	
Stock and expenses	150 00	
Expenses of show	189 65	
Allowance to officers	30 00	
Treasurer Farmers' Institute	3 00	
Other expenses	391 01	
		$967 61
Balance on hand		$1,317 36

LeB. D. LOCKHART, Treasurer.

REPORT.

Hay an average. Wheat and oats an average. Buckwheat and barley below the average. Potatoes good. Turnips an averge, of good quality. Fruit fair. Increased interest is manifested in orcharding.

During the year the Directors of the Society held six meetings, which were well attended. Two Ayrshire bulls and eight purebred Yorkshire boars were bought.

The annual Fair was held on the grounds of the Moncton Exhibition Association, and was open to the Counties of Westmorland and Albert. The exhibits of horses, cattle, and poultry were very satisfactory. In fruits, roots, and grain, the display was most gratifying, as was also the domestic department.

The coming fall an Exhibition will be held in the City of Moncton, and farmers and citizens are already considering ways and means of insuring its success.

D. D. LEGER, Secretary.

SOCIETY FOR DISTRICT No. 73, GLOUCESTER COUNTY.

President—A. D. Doucet, Beresford.
Secretary-Treasurer—B. H. Cormier, Elm Tree.

INCOME.

Balance from previous year	$ 99 26	
Subscriptions and donations (56 members)	64 00	
Provincial grant	105 00	
Sale of stock	14 50	
Sale of seeds	190 50	
Other sources	19 05	
		$492 31
Carried forward		$492 31

Brought forward,		$492 31

EXPENDITURE.

Paid premiums	$ 61 35	
Stock and expenses	51 65	
Seeds and expenses	196 50	
Expenses of show	6 95	
Allowance to officers	8 85	
Treasurer Farmers' Institute	19 05	
Other expenses	12 85	
		$357 20
Balance on hand		$135 11

B. H. CORMIER, Treasurer.

REPORT.

Hay very good. Wheat above the average. Oats fair. Roots below the average. Fruit below the average.

The Farmers' Institute meetings, which are addressed by speakers sent by the Department of Agriculture, are well attended, and much interest is taken in them. We are very grateful to the Department for this assistance.

B. H. CORMIER, Secretary.

SOCIETY FOR DISTRICT No. 74, KINGS COUNTY.

President—Samuel H. Johnson, Midland.
Secretary-Treasurer—R. W. Menzie, Midland.

INCOME.

Balance from previous year	$182 32	
Subscriptions and donations (50 members)	75 00	
Provincial grant	106 00	
Sales of stock	277 75	
		$641 07
Carried forward,		$641 07

Brought forward,		$641 07

EXPENDITURE.

Stock and expenses	$476 74	
Allowance to officers	10 00	
Delegates Winter Fair	6 00	
Treasurer Farmers' Institute	12 50	
Other expenses	54 00	
		559 24
Balance on hand		$81 83

R. W. MENZIE, Treasurer.

REPORT.

Hay a good average. Oats good. Straw a little short. Buckwheat damaged by frost in most sections. Wheat but little raised. Barley fair. Potatoes fair, affected by rot. Turnips good. Other roots good. Apples a light crop.

The funds of the Society are spent in purchasing of purebred stock; and our farmers are beginning to realize that the best stock is necessary for successful farming.

R. W. MENZIE, Secretary.

SOCIETY FOR DISTRICT No. 75, NORTHUMBERLAND COUNTY.

President—B. N. T. Underhill, Blackville.
Secretary-Treasurer—R. M. Grindlay, Blackville.

INCOME.

Balance from previous year	$ 84 96	
Subscriptions and donations (50 members)	50 00	
Provincial grant	119 00	
Sale of stock	35 00	
Other sources	8 00	
		$296 96

EXPENDITURE.

Paid premiums	$126 15	
Stock and expenses	40 00	
Expenses of show	14 75	
Allowance to officers	11 32	
Farmers' Institute	8 75	
Other expenses	9 00	
		209 97
Balance on hand		$86 99

R. M. GRINDLAY, Treasurer.

REPORT.

Hay an average. Grain fair. Roots good. Fruit light.

The Society held its annual fair on October 30th, which was well attended. There were between three and four hundred entries; and the exhibits in all classes were very good, roots being especially fine.

R. M. GRINDLAY, Secretary.

SOCIETY FOR DISTRICT No. 76, VICTORIA COUNTY.

President—Alex. Walker, Tilley.
Secretary—J. F. Tweeddale, M. P. P.
Treasurer—Chas. Roberts, Red Rapids.

INCOME.

Balance from previous year	$ 75 33	
Subscriptions and donations (71 members)	71 00	
Provincial grant	105 00	
		$251 33

EXPENDITURE.

Stock and expenses	$117 53
Balance on hand	$133 80

CHAS. ROBERTS, Treasurer.

REPORT.

Hay above the average. Grain extra good in quality, and a good yield. Oats an average. Buckwheat damaged by frosts. Potatoes extra good crop. Turnips a poor yield.

The Society has been working along the lines of improved stock and seed grain.

J. F. TWEEDDALE, Secretary.

SOCIETY FOR DISTRICT No. 77, MADAWASKA COUNTY.

President—J. Aug. Bernier, Edmundston.
Secretary-Treasurer—J. B. Michaud, Edmundston.

INCOME.

Balance from previous year	$655 85	
Subscriptions and donations (82 members)	82 00	
Provincial grant	103 00	
Farmers' Institute grant	15 00	
Interest	8 50	
Other sources	37 25	
		$901 60

EXPENDITURE.

Paid premiums	$245 25	
Stallion and expenses	552 65	
Allowance to officers	18 00	
Other expenses	42 55	
		858 45
Balance on hand		$43 15

J. B. MICHAUD, Treasurer.

REPORT.

Hay good. Grain not as good as last year; early frost did much damage. Roots good. Fruit very poor, owing to the extreme cold of the winters of 1904 and 1905.

The Society imported a French Coach stallion of the best breeding last spring.

The Society will endeavour to increase its membership, and hope to have a large Exhibition next year.

J. B. MICHAUD, Secretary.

SOCIETY FOR DISTRICT No. 78, VICTORIA COUNTY.

President—Walter Warnock, Grand Falls.
Secretary-Treasurer—James Watson, Grand Falls.

INCOME.

Balance from previous year	$202 29	
Subscriptions and donations (52 members)	52 00	
Provincial grant	100 00	
Sale of stock	40 45	
		$394 74

EXPENDITURE.

Stock and expenses	$205 27	
Allowance to officers	10 00	
Other expenses	179 47	
		394 74
Balance on hand		$179 47

JAMES WATSON, Treasurer.

REPORT.

Hay a good average. The early ripened grain did not yield as well as the late ripening, owing to heat and drought. Buckwheat light. Potatoes fair average. Turnips and other roots a good yield. Apples about a failure. The continuous severe frost of last winter killed many trees, and those that escaped did not do well. Small fruits an average.

The Society has been spending its funds in purchasing purebred cattle, horses, sheep, and swine, and a marked improvement is noticeable as a result. Some seed wheat of the best class was also imported. The Farmers' Institute meetings have been very instructive, and many of our farmers are adopting the advanced methods advocated by the speakers.

JAMES WATSON, Secretary.

SOCIETY FOR DISTRICT No. 79, RESTIGOUCHE COUNTY.

President—Ebenezar McMillan, Black Point.
Secretary-Treasurer—Samuel Laughlan, Black Point.

INCOME.

Balance from previous year	$72 35	
Subscriptions and donations (60 members)	60 00	
Provincial grant	99 00	
		$231 35

EXPENDITURE.

Paid premiums	$83 50	
Expenses of show	7 00	
Allowance to officers	15 00	
Treasurer Farmers' Institute	15 00	
Other expenses	1 50	
		$122 00
Balance on hand		$109 35

S. LAUGHLAN, Treasurer.

REPORT.

Hay an average. Wheat an average. Oats above the average. Buckwheat poor. Potatoes and turnips an average. All kinds of fruit poor.

The Society held the usual show this year.

S. LAUGHLAN, Secretary.

SOCIETY FOR DISTRICT No. 80, RESTIGOUCHE COUNTY.

President—John Wheten, Balmoral.
Secretary—D. A. Arseneau, Balmoral.
Treasurer—Hon. C. H. LaBillois, Dalhousie.

REPORT.

Balance from previous year	$230 27	
Subscriptions and donations (50 members)	50 00	
Provincial grant	101 00	
Farmers' Institute grant	15 00	
		$396 27

EXPENDITURE.

Stock and expenses	$117 69	
Seeds and expenses	60 40	
Advertising Farmers' Institute Meeting	1 00	
		179 09
Balance on hand		$217 18

C. H. LaBILLOIS, Treasurer.

REPORT.

Hay a fairly good crop. Grains a good average. Roots good. Fruit very good.

The Society did not hold a show this year.

The policy of the Society will continue to be the importing of purebred stock and superior seeds. It will also urge upon the Department the desirability of placing an illustration orchard in this district, and will do all in its power to establish a cheese factory.

D. A. ARSENEAU, Secretary.

SOCIETY FOR DISTRICT No. 81, NORTHUMBERLAND COUNTY.

President—Henry Swim, Doaktown.
Secretary—Wm. Murray, Doaktown.
Treasurer—Wm. Whyte, Doaktown.

INCOME.

Balance from previous year	$295 49	
Subscriptions and donations (50 members)	100 00	
Provincial grant	120 00	
Sale of stock	28 00	
Sale of seeds	12 50	
		$555 99

EXPENDITURE.

Paid premiums	$ 92 10	
Stock and expenses	112 45	
Seeds and expenses	14 93	
Expenses of show	25 60	
Allowance to officers	15 00	
Delegates to F. and D. Association	10 00	
Delegate Winter Fair	8 35	
Treasurer Farmers' Institute	12 50	
Other expenses	9 75	
		300 68
Balance on hand		$255 31

WM. WHYTE, Treasurer.

REPORT.

Hay below the average. Grain on damp lands good; on dry lands poor. Potatoes good. Turnips an average. Fruit a failure, one-half of the trees dead.

The Society held the usual show, and imported a number of pure-bred stock animals.

WM. MURRAY, Secretary.

SOCIETY FOR DISTRICT No. 82, WESTMORLAND COUNTY.

President—Thos. L. Gallant, Barachois.
Secretary—Mathias Arseneau, Upper Abougagan.
Treasurer—Rev. E. N. Massé, Barachois.

INCOME.

Balance from previous year	$260 40	
Subscriptions and donations (127 members)	127 00	
Provincial grant	121 00	
Sale of seeds	89 45	
Institute grant	15 00	
		$612 85

EXPENDITURE.

Stock and expenses	$118 50	
Seeds and expenses	89 45	
Allowance to officers	8 00	
Other expenses	1 65	
		217 60
Balance on hand		$395 25

E. N. MASSE, Treasurer.

REPORT.

Hay a good average. Oats good. Wheat extra good in quality and quantity. Barley and buckwheat below the average. Potatoes about seventy-five per cent. of a crop. Turnips good. Fruit a good average.

The operations of the Society are confined to the importation of purebred cattle. Dealers in purebred stock are invited to communicate with the Society, as we want three or four Durham bulls and several Leicester rams of the best breeding.

No decision has been arrived at in regard to holding an Exhibition next fall.

MATHIAS ARSENEAU, Secretary.

SOCIETY FOR DISTRICT No. 83, CARLETON COUNTY.

President—W. C. Rideout, Middle Simonds.
Secretary—W. N. Raymond, Middle Simonds.
Treasurer—S. E. Colwell, Middle Simonds.

INCOME.

Balance from previous year	$252 29	
Subscriptions and donations	80 00	
Provincial grant	99 00	
Sale of seeds	712 00	
Grant to Farmers' Institute	15 00	
		$1,158 29

EXPENDITURE.

Seeds and expenses	$775 67	
Allowance to officers	25 00	
Delegates to F. and D. Association	8 00	
Other expenses	36 00	
		844 67
Balance on hand		$313 62

S. E. COLWELL, Treasurer.

SOCIETY FOR DISTRICT No. 84, MADAWASKA COUNTY.

President—Antoine Cyr, St. Francois.
Secretary—Emile Nadeau, St. Francois.
Treasurer—Joseph Albert, Pelletier's Mills.

INCOME.

Balance from previous year	$ 58 10	
Subscriptions and donations (80 members)	80 00	
Provincial grant	120 00	
Grant to Farmers' Institute	15 00	
Sale of stock	4 00	
Sale of seeds	115 00	
		$392 10

EXPENDITURE.

Paid premiums	$101 50	
Stock and expenses	26 10	
Seeds and expenses	115 00	
Expenses of show	7 50	
Allowance to officers	12 00	
Treasurer Farmers' Institute	50	
Other expenses	15 00	
		277 60
Balance on hand		$114 50

JOSEPH ALBERT, Treasurer.

REPORT.

Hay about two-thirds of an average. Wheat and oats good. Buckwheat fair. Potatoes and other roots an average. Fruit good.

The Society purchased two purebred Yorkshire boars during the past year, and it is the intention to import a well-bred stallion in the near future. Quite a large quantity of grass seed was handled with good success. The annual Fair was held on October 3rd, and was well attended. Exhibits generally were good.

EMILE NADEAU, Secretary.

SOCIETY FOR DISTRICT No. 9, NORTHUMBERLAND COUNTY.

President—Wm. Kerr, Chatham.
Secretary-Treasurer—B. M. Moran, Chatham.

INCOME.

Balance from previous year (this must be same amount as in last account),	$396 18	
Received subscriptions and donations for year (129 members)	159 00	
Received Provincial grant	157 00	
Received from other sources	387 00	
		$1,099 18

EXPENDITURE.

Paid on account horse "Garrare"	$300 00	
Paid for stock and expenses	271 00	
Paid allowance to officers of Society	25 00	
Paid for other expenses	157 70	
		753 70
Balance		$345 48

GEO. E. FISHER, Treasurer for 1905.

REPORT.

A very open spring, and most favourable for getting work done. In this section, after the middle of June, most favourable weather for all crops.

Hay.—On newly seeded land above the average. Clover, particularly, a good crop.

Grain.—Above the average. Grain well filled, and straw good.

Potatoes extra good crop. Turnpis very heavy crop. Mangolds good crop. Other roots above the average.

Fruit.—A great interest is being taken along this line, and a number of small orchards are being started.

Ayrshires and Shorthorns are the principal stock, with a few Holsteins.

Quite a few head of Ayrshires imported during the season.

The imported Clyde "Garrare" is getting good stock; and farmers, seeing his stock, are coming to waken up to the fact that he is the type of horse needed.

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